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COURSE

OF

MEDICAL STUDIES.

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COURSE

OF

MEDICAL STUDIES:

CONTAINING

A COMPARATIVE VIEW

OF

THE ANATOMICAL STRUCTURE

OF MAN AND OF ANIMALS;

A HISTORY OF DISEASES;

AND

AN ACCOUNT OF THE KNOWLEDGE HITHERTO ACQUIRED WITH REGARD TO THE REGULAR ACTION OF THE DIFFERENT ORGANS.

A WORK CHIEFLY DESIGNED FOR THE USE OF MEDICAL STUDENTS.

BY J. BURDIN, M. D.

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SYSTEM OF CIRCULATION.

OF THE VEINS.

378. The arterial blood, after it has been diſtributed to all the parts of the organization, and has furniſhed them with the materials neceſſary for the different changes which are there continually taking place, returns by two orders of veſſels, the veins and the lymphatics.

The greater part of the blood is brought back by the veins. This part is that which has undergone the leaſt changes, and which preſerves a brown red colour: the lymphatics collect the ſerous reſidua of all the ſecretions, and the product of digeſtion, which they pour into the venous ſyſtem.

The ſides of the veins are thin, extenſible and flexuous. Theſe veſſels, in general, accompany the arteries; exhibit frequent anaſtomoſes, and in

the inſide have valvular folds which oppoſe the return of the blood.

379. The veins ſeem to ariſe from every part of the organs by exceedingly fine radiculæ. Theſe radiculæ unite to form veins, which afterwards continue to unite in order to form the rami, branches, and principal trunks.

The venous blood proceeds to the heart by two large trunks, one of which brings it back from the thoracic limb, from the head and from the breaſt: the other brings back that which has been diſtributed to the pelvian limb, the pelvis, and the abdomen.

We ſhall here deſcribe the general courſe purſued by the veins in the formation of theſe two trunks.

380. The veins which bring back the blood from the thoracic limb may be diſtinguiſhed into profound and ſuperficial. The profound are placed between the muſcles, and exhibit nearly the ſame order of diviſion as the arteries which they accompany. The reſt are *ſuperficial*, and proceed beneath the ſkin.

Of the *profound* veins, ſome ariſe at the extremity of the fingers, *the digital*, aſcend along their palmar face, unite in the hand, and form an arch, to which the *metacarpian*, *carpian*, and *ſuper-*

palmar

palmar rami proceed. Each of the extremities of this arch gives birth to a vein, which aſcends along the fore-arm, the *radial*, *cubital*, accompanying the arteries of the ſame name. In their paſſage they receive rami, ſome of which follow the arterial diviſions, and others communicate with the ſuperficial veins. When they reach the bend of the arm theſe two veins unite, and again ſeparate to form two others, the *humeral* (brachial). Theſe veins accompany the humeral artery as far as the ſuperior part of the arm, and receive rami correſponding to thoſe given out by the artery. Of theſe rami, ſome come from the circumference of the articulation of the elbow, *the collaterals of the cubitus*; the reſt bring back the blood from the muſcles: *the muſcular* and *inter-muſcular*.

There are three principal *ſuperficial* veins: two on the ſides of the fore-arm, and one in the middle.

The cutaneous radial (cephalic).

The cutaneous cubital (baſilic).

The cutaneous median.

The median ariſes in a great number of rami from the palm of the hand, and the radial edge of the thumb; it aſcends on the middle of the palmar face of the fore-arm, anaſtomoſes with the neighbouring veins, and terminates at the bend of the arm, where it divides itſelf into two branches,

which proceed, one to the right and the other to the left, and unite themſelves to the profound radial and cubital veins.

The *cutaneous cubital* ariſes in ſmall rami, which proceed along the laſt two fingers, on the back of the hand (the ſalvatella), and along the cubital edge of the fore-arm. In this paſſage it receives ſeveral rami, which come from the neighbouring integuments. When it reaches the bend of the arm, it furniſhes a branch of communication (the baſilic median) which proceeds to one of thoſe of the median. It then continues along the interior edge of the arm, and with ſeveral others concurs towards the formation of the axillary trunk.

The *cutaneous radial* comes from the ſuper-palmar face of the firſt two fingers, paſſes between the firſt two bones of the metacarpus (cephalic of the thumb), and anaſtomoſes with the preceding on the back of the hand, forming an arch, to the convexity of which the rami ariſing from the third and fourth fingers proceed: it then takes a direction along the radial edge of the fore-arm, and when it reaches the bend of the arm it furniſhes a branch, which communicates with one of thoſe of the median (cephalic median), and aſcends along the radial edge of the arm, receiving muſcular and cutaneous rami. This vein then proceeds between the ſuper-acromio-humerian and the coſto-humerian

rian muſcles, and diſcharges itſelf below the clavicle in the common trunk.

The humeral veins, formed by the junction of the profound and ſuperficials of the fore-arm, unite towards the hollow of the arm-pit, and produce the AXILLARY VEIN.

This venous trunk paſſes between the clavicle and the firſt rib, and receives five principal branches which bring back the blood from the ſhoulder and the exterior face of the thorax.

The ſcapulo-humeral . . . . *The circumflex.*
Super-ſcapular. . . . . *Acromial.*
Sub-ſcapular. . . . . *Common ſcapular.*
Sterno-thoracic. . . . . } *Thoracic.*
Coſto-thoracic. . . . . }

Beſides theſe branches, the axillary vein often receives the cutaneous radial; it then paſſes between the trachelo-coſtian muſcles, and penetrates into the thorax, where it aſſumes the name of the SUB-CLAVIAN.

381. The ſub-clavian vein is formed by the union of ſix principal branches:

1ſt. THE CUTANEOUS RADIAL.

2d. The veins which come from the firſt intercoſtal ſpaces, from the bronchiæ, the mediaſtinum, and the pericardium: theſe by their union form the SUPERIOR INTER-COSTAL.

3d. Thoſe which ariſe from the thyroid gland,

from the thymus and the tracheal artery: theſe by their union form the INFERIOR THYROIDIAN.

4th. Thoſe which come from the ſides of the abdomen, anaſtomoſing with a ſub-pubian, and thoſe furniſhed by the interior ſides of the thorax, which unite to the inter-coſtal veins: theſe by their union produce the SUB-STERNAL.

5th. Thoſe which bring back the blood from a part of the head and neck, forming two flexuous branches. The *exterior* takes its origin under the integuments of the occiput. It often receives a ramus from the lateral ſinus, which iſſues from the cranium through the maſtoidian foramen. It then deſcends along the tranſverſe apophyſes of the vertebræ of the neck, receiving rami from the neighbouring muſcles, and unites to the *interior branch*, towards the lower part of the neck. The latter ariſes from the lateral ſinus, deſcends along the vertebral canal, receives vertebral rami, and forms frequent anaſtomoſes with the exterior branch by rami which paſs between the tranſverſe apophyſes. The reſult of the union of theſe two branches is THE POSTERIOR CEREBRAL.

6th. Thoſe which bring back the blood from the lateral parts of the head and the integuments of the neck are very numerous, and exceedingly variable. *Some* of them come from the temporal region, from the circumference of the ear, and from a part of the face. Theſe form a temporal branch, which

 deſcends

deſcends before the maſtoid apophyſis, anaſtomoſes with that of the forehead, and receives the *occipital*. The latter is produced by the rami which come from the occiput and the neck. The *reſt* come from the muſcles of the neck and of the ſhoulder: *the trachelo-cervical, trachelo-ſcapular*. All theſe veins unite to form a large branch, THE TRACHELO-SUB-CUTANEOUS.

This branch, after communicating with the cephalic trunk, deſcends on the ſides of the neck, between the cutaneous and ſterno-maſtoidian muſcle, and frequently anaſtomoſes with the cutaneous radial*.

The ſix veins here deſcribed unite above the clavicle, and form the SUB-CLAVIAN VEIN.

On the right ſide, this vein proceeds directly into the thoracic vein; and on the left it unites to the trunk which brings the blood back from the head.

382. The blood returns from the head chiefly by two large trunks. One of them brings back that which is diſtributed to the face; the other brings back the greater part of that of the encephalic organ.

The veins which bring back the blood from the

* The inferior thyroidian and the ſub-ſternal of the right ſide generally proceed to the trunk of the thoracic vena cava, and the ſuperior inter-coſtal to the prælumbo-thoracic vein.

different parts of the face are exceedingly numerous. Some of them proceed from the thyroid gland, unite with rami from below the tongue, *the ſub-lingual* (ranine); from the os hyoides, and from the larynx: by their union they produce the SUPERIOR THYROIDIAN.

Others bring back the blood from the tongue and from its muſcles, and unite to form the LINGUAL.

Some return from the larynx and the velum palati: theſe often unite with the preceding, or produce a diſtinct branch, the PHARYNGIAN.

Thoſe which are ſpread over the forehead unite, and form a ramus called the *median of the forehead* (frontal, *préparate*) which deſcends towards the large angle of the eye, on the ſides of the noſe and the mouth. In this paſſage it receives the *palpebral*, *ſuperciliar*, *naſal*, and *labial* rami: it then paſſes over the ſides of the jaw, deſcends on the chin, receives the *ſub-mentals*, and rami from the amygdalæ and the velum palati. The union of all theſe rami conſtitutes the LABIAL (facial).

Thoſe which return from the pterygoid foſſa, the guttural region, and the jaw, furniſh the *pterygoidian*, the *ſpheno-palatine*, the *ſuper-maxillary* (buccal), the *ſub-orbitar*, and the *maxillo-dentary*. Theſe by their union form a branch which deſcends towards the angle of the jaw, exhibiting

frequent anaſtomoſes with the neighbouring veins, and terminates either in the trachelo-ſub-cutaneous vein, in the cephalic vein, or in their anaſtomotic trunk: THE MAXILLO-BUCCAL (interior maxillary).

All theſe veins, ariſing from the different parts of the face, unite to form a common trunk, THE MAXILLO-FACIAL (branch of the jugular), which unites with the trunk of the veins of the brain.

The veins of the encephalic organ comprehend thoſe which proceed, 1ſt, from the meninx; 2d, from the cerebrum; 3d, from the cerebellum and the meſencephalon; 4th, from the rachidian prolongation and its covering; 5th, from the orbit.

The veins of the encephalon exhibit a diſpoſition altogether peculiar. They are ſmall and numerous, have no valves, and their ſides are exceedingly thin. They are extremely flexuous, and preſent frequent anaſtomoſes. As theſe veins do not accompany the arteries and their rami, inſtead of forming branches and trunks by their union, they proceed into the ſinuſes formed by the meninx. The moſt conſiderable of theſe ſinuſes extends from the ethmoidal ridge to the occiput, following the convexity of the cranium, *median ſinus* of the *brain:* it continues backwards with two *lateral ſinuſes*, which proceed to the occipito-petrous hiatus. At the baſe of the median ſeptum is a ſinus which receives the blood from the choroidian veins

veins (the choroidian), and proceeds into one of the lateral ſinuſes. The other ſinuſes are ſituated at the baſe of the cranium. *See the deſcription of the brain.*

The veins which ſpread over the meninx accompany the arteries, and proceed into the ſinus of the baſe of the cranium: *the meningian.*

Of the veins of the cerebrum, ſome, which are ſuperficial, ariſe from every point of that organ, ſpread over its ſurface, and proceed chiefly into the median ſinus and the lateral ſinuſes: *the lobar.* The reſt ariſe profoundly from the ventricles of the brain and the plexus choroides: theſe proceed into the choroidian ſinuſes: *the choroidian* (vein of Galen).

The veins of the cerebellum and the meſencephalon proceed into the lateral ſinuſes, and the petrous or the choroidian ſinus.

The veins which come from the covering of the vertebral prolongation proceed on each ſide over the bodies of the vertebræ, and extend from the ſacrum to the lateral ſinuſes: in their paſſage they receive and give out rami, which paſs through the inter-vertebral holes, and communicate, at the cervical region, with rami of the vertebral vein; at the dorſal region with inter-coſtal rami; at the loins, with others proceeding from the lumbar veins; and at the ſacrum, with rami which come from the lateral ſacral veins.

Theſe

Theſe two veins in their paſſage frequently anaſtomoſe with each other, forming reticulated arches on the meninx: *the meningo-rachidian.*

The cerebral prolongation furniſhes alſo two veins, one of which paſſes before and the other behind the rachis. They accompany the arteries, and, with thoſe already mentioned, proceed into the lateral ſinuſes: *the median rachidian.*

The veins which proceed from the orbit are the lacrymal, the ſuper-orbitar, the ciliar, the ethmoidal, the muſcular, the palpebral, and the central of the retina: by their union they form the *orbitar* (ophthalmic), which proceeds into the cavernous ſinus.

The blood, brought back from all theſe veins of the brain, proceeds into the different ſinuſes, which unite with the laterals.

The lateral ſinuſes are then continued with a vein which, at its origin, has a dilatation lodged in the occipito-petrous (hiatus gulph of the jugular).

This vein, the *anterior cerebral*, unites at the height of the larynx with the maxillo-facial, and the reſult of this union is the CEPHALIC TRUNK (interior jugular).

This trunk deſcends on the exterior ſide of the carotid arteries, under the ſterno-maſtoidian and ſome other muſcles. In this paſſage it receives ſome muſcular and cutaneous rami: it exhibits anaſtomoſes with the exterior jugular, and unites with

with the ſub-clavian vein to form the large trunk of the THORACIC VENA CAVA (ſuperior vena cava).

This vena cava deſcends in the thorax, ſomewhat obliquely from right to left. Before it penetrates into the pericardium, it receives a *large vein*, which brings back the blood from the interior ſides of the thorax, and which eſtabliſhes a communication between the two venæ cavæ.

This large *odd* vein (azygos) takes its origin in the region of the loins, by two anaſtomotic rami, which come either from the right renal, or from one of the lumbar, or from the thoracic vena cava. It paſſes into the thorax, and unites to ſeveral veins which come from the ſides of the breaſt, and to one which comes from the abdominal cavity.

That which comes from the abdominal cavity often ariſes from the left renal, or from one of the lumbar veins of that ſide: it traverſes the diaphragm with the aorta, receives the veins which come from the laſt five inter-coſtal ſpaces on the left ſide, and turns to the right to unite with the preceding trunk: *the ſmall prælumbo-thoracic* (ſmall azygos).

The veins which bring back the blood from the interior of the thorax are numerous: ſome of them come from the inter-coſtal ſpaces of the laſt ſternal ribs of the left ſide, *left inter-coſtals*; others from the inter-coſtal ſpaces of the right ſide, *the ſuperior and*

and inferior right inter-coſtals; and the laſt proceed from the œſophagus, *the œſophagian*; from the poſterior mediaſtinum, *the mediaſtine*; and from the bronchiæ, *the bronchial.*

All theſe veins unite in ſucceſſion and form a trunk, which aſcends on the right ſide of the dorſal vertebræ, and empties itſelf into the thoracic vena cava, at the height of the third vertebra of the back: THE PRÆLUMBO-THORACIC VEIN (azygos).

The thoracic vena cava deſcends behind the ſternum, in the ſubſtance of the mediaſtinum, before and a little to the right of the aorta; traverſes the pericardium, and proceeds into the right auricle of THE HEART.

383. The veins which bring back the blood from the pelvian limb may be diſtinguiſhed, like thoſe of the thoracic limb, into *profound* and *ſuperficial.*

Of the profound veins, ſome come from the plantar face of the toes, *the digital:* they unite under the ſole of the foot, and form an arch from which two branches ariſe: one of theſe runs along the interior edge of the foot, the *interior plantaris*; the other, which is larger, extends along its exterior edge: *exterior plantaris.*

Both receive *ſub-tarſian* and *ſub-metatarſian* rami. They then unite to form a vein which paſſes behind the interior malleolus, and aſcends behind the tibia, *the poſterior tibial*, accompanying the

the artery of the ſame name. This vein receives that which brings back the blood from the cavity of the tibia, *medullary of the tibia*, and that which accompanies the *peronæal* artery. The poſterior tibial, when it reaches the hollow of the ham, receives another vein, which ariſes from the ſuper-plantar face of the toes and of the foot, and which is formed by the *ſuper-tarſian*, the *ſuper-metatarſian*, and the *malleolar* rami. This vein then aſcends before the tibia, the *anterior tibial*, following the artery of the ſame name, and in its paſſage receives ſeveral muſcular rami.

The anterior tibial and the poſterior unite, in the hollow of the ham, into one trunk, from which ariſe two other veins which accompany the popliteal artery: *the poplitean.* In their paſſage they receive a great number of veins.

1ſt. Thoſe which bring back the blood from the circumference of the articulation of the knee: *the poplitean articular.*

2d. A *ſuperficial* vein, which ariſes from the integuments of the ſuper-plantar face of the foot, advances along its exterior edge, paſſes behind the malleolus, and runs along the peronæal edge of the leg: the *peronæo-malleolar* (exterior or ſmall ſaphene).

In this paſſage it receives ſeveral rami: one of them, which is *ſuperficial*, comes from the circumference of the articulation of the foot, and aſcends behind

behind the leg, along its middle part: *the median of the leg.*

The poplitean veins, formed by the union of all the preceding, traverſe the iſchio-femorian tendon, and conſtitute the FEMORAL VEIN, which reaſcends along the interior part of the thigh, and receives ſeveral muſcular branches. One, which is very large, brings back the blood from the muſcles of the poſterior part of the thigh: *the inter-muſcular* or *profound.*

Another, equally large, and *ſuperficial*, ariſes from the ſuper-plantar face of the foot, proceeds along its interior edge, paſſes over the malleolus, and aſcends along the tibial edge of the leg: *the tibio-malleolar* (large or interior ſaphene). This vein, at the poplitean region, receives a ſtrong ramus, which comes from one of the diviſions of the median of the leg. The tibio-malleolar then continues on the interior ſide of the knee and the thigh, as far as the inguinal region: in its paſſage it receives rami from the integuments of the leg, of the thigh, and of the abdomen.

The FEMORAL VEIN, when it reaches near the inguinal region, receives the veins of the ſcrotum, the *ſcrotal*; and thoſe of the integuments of the groin, *the inguinal*; it then penetrates into the abdomen, paſſing below the crural arch, and aſcends along the prælumbo-trochantinian muſcle.

In this paſſage, it receives firſt a vein which brings

brings back the blood from the muſcles of the abdomen, and which turns round on the ridge of the bones of the ilium: *the circumflex of the ilium* (anterior iliac).

2d. That which brings back the blood from the muſcles of the abdomen, and which at its origin anaſtomoſes with rami of the inter-coſtal and the ſub-ſternal veins: *the ſuper-pubian* (epigaſtric).

3d. An odd vein which paſſes over the middle of the ſacrum: *the median of the ſacrum* (the middle ſacral).

The union of theſe three veins produces a large branch, *the iliac vein* (exterior iliac), which unites to that produced by all the veins which bring back the blood from the organs contained in the cavity of the pelvis.

Theſe veins are,

1ſt. Thoſe which return from the muſcles of the nates and the poſterior region of the thigh: *the feſſières* (poſterior iliac).

2d. That which brings back the blood from the organs of generation: *the ſub-pelvian* (interior pudical).

3d. That produced by rami proceeding from the bladder, the ſeminal veſicles, the rectum, and the uterus: *the veſico-proſtatic.*

4th. That produced by the veins of the interior part of the thigh: *the ſub-pubio-femoral* (obturatrix).

5th. Thoſe

5th. Thoſe which come from the ſides of the ſacrum: *the lateral ſacral.*

6th. That which brings back the blood from the iliaco- and prælumbo-trochantinian muſcles: *the iliaco-muſcular.*

All theſe branches unite to form the ILIAC VEIN.

The two iliac veins unite on the body of the fourth lumbar vertebra, and produce a large trunk, which proceeds to the right, on the ſide of the bodies of theſe vertebræ: the ABDOMINAL VENA CAVA (the inferior vena cava).

This vein receives a very large number of branches:

1ſt. Four or five veins on each ſide, placed between the lumbar vertebræ, and which bring back the blood from the muſcles of the abdomen and loins: *the lumbar.* They communicate with rami of the inter-coſtals, and with vertebral rami.

2d. A vein which comes from the teſticle, and aſcends along the cord of the ſpermatic veſſels: *the teſticular* (ſpermatic).

In the female the correſponding vein is that of the *ovarium.*

3d. The veins which proceed from the kidneys, the ſuper-renal capſules, and the inferior ſide of the diaphragm: *the renal, ſuper-renal,* and *ſub-diaphragmatic.*

The veins which bring back the blood from the

different organs of digeſtion traverſe the liver before they proceed into the abdominal vena cava.

The veins which furniſh blood to the liver are thoſe of the ſpleen, the pancreas, the meſentery, the inteſtines, and the ſtomach.

1ſt. The vein of the ſpleen proceeds, in a tranſverſe direction, to the right, below the pancreas: *the ſplenic*. It receives, in its paſſage, veins which proceed from the ſtomach, *the gaſtro-ſplenic* (ſhort veſſels); from the ſtomach and the epiploon, *the gaſtro-epiploic*; from the pancreas, *the pancreatic*; and from the epiploon, *the epiploic*.

2d. The vein which brings back the blood from the ſmall inteſtines, *the great meſenteric*, (ſuperior meſenteric). Its diviſions correſpond to thoſe of the artery; it forms in the ſame manner a curvature, the concavity of which, turned to the right, receives the three right colic veins and the right gaſtro-epiploic vein. Its convexity receives a great number of branches, which bring back the blood from the duodenum, the jejunum, and the ileum.

3d. The ſecond meſenteric, which is ſmaller, is produced by the veins of a portion of the large inteſtines, *the ſmall meſenteric* (inferior meſenteric); it accompanies the diviſions of the artery of the ſame name.

The union of theſe three branches produces a large trunk, *the ſub-hepatic* (vena portæ), which proceeds obliquely to the right, and, before it enters the

the liver, receives a vein which proceeds from the ſtomach, *the right gaſtric* (ſtomachic coronary); one from the gall-bladder, *the cyſtic*; one from the pylorus, *the pyloric*; and one from the duodenum, *the duodenal.*

The ſub-hepatic vein, when it enters the liver, ſwells up, towards its tranſverſe furrow, and forms a ſinus, whence proceed five or ſix branches, which divide and ſubdivide themſelves to be diſtributed to every point of that viſcus. Theſe hepatic veins, which perform the office of arteries, exhibit a ſtructure altogether peculiar. Their ſides are thick; they are enveloped by a membranous tunic, and have no valvular folds in the inſide: they accompany the diviſions of the hepatic artery.

The blood, which is diſtributed to every part of the liver by the ſub-hepatic vein and the hepatic artery, returns by a ſecond order of veins, the *ſuper-hepatic* (ſingle hepatics). Theſe veins, by their ſucceſſive union, form three branches, which iſſue from the liver towards its convex edge, and unite with the common trunk of all the preceding veins, THE ABDOMINAL VENA CAVA, near its paſſage through the pillars of the diaphragm.

This vein, after traverſing the diaphragm, penetrates immediately into the pericardium, and proceeds into the ſinus of the venæ cavæ.

384. In the fœtus, the vein which brings back the blood from the placenta, *the umbilical,* is di-

vided into two branches; one of theſe proceeds into the ſinus of the ſub-hepatic vein; the other proceeds directly into the vena cava. Theſe two veins become obſtructed ſoon after birth.

385. The veins which come from the different points of the heart unite into two branches, *the cardiac* (the coronary).

The anterior veins ariſe from the anterior face of the heart, near its apex; aſcend in the furrow which ſeparates the ventricles, and turn round between the ſinus of the pulmonary veins and the aortic ventricle, as far as the poſterior part of the heart.

The poſterior cardiac veins come alſo from the apex of the heart: they proceed backwards in the furrow which ſeparates the ventricles, and generally unite to the preceding to form a trunk, which opens into the ſinus of the venæ cavæ.

OF

OF THE LYMPHATICS.

386. The thinneſt part of the blood, the lymphatic reſiduum of all the ſecretions, the ſerous matter ſecreted by the ſurfaces of different organs, and depoſited either in the large cavities or in the cells of all the tiſſues, and the chyle produced by digeſtion, are all collected by the lymphatic veſſels. Theſe veſſels terminate in two trunks, which proceed into the ſub-clavian veins. Of theſe two trunks, the left is much ſtronger: it brings back the lymph from the whole inferior part of the body, and from the half of the ſuperior.

The lymphatic veſſels are membranous, tranſparent, exceedingly thin, and much more numerous than the veins, which they accompany. Like the veins, they are generally arranged in two ſtrata: one, which is ſuperficial, proceeds below the ſkin; the other, which is profound, is placed between the muſcles and in the ſubſtance of various organs. Like the veins, theſe veſſels have in the inſide valvular folds, which oppoſe the return of the fluids, and exhibit frequent anaſtomoſes.

The lymphatic veſſels have their origin at the ſurface of all the membranes, and the ſides of the cavities, in pores or villoſities, and theſe pores or

villoſities abſorb the fluids with which they are in contact, when the latter have been properly aſſimilated or digeſted.

Theſe veſſels ſeem to form alone the tiſſue of the white membranes. In ſome organs, they are ſo numerous, that, by croſſing each other, they conſtitute plexus or reticulations which cover their whole ſurface.

The radiculæ of the capillary tubes unite to form veſſels more apparent: the latter proceed into ſmall glands, where they depoſit the liquids which they contain. Theſe liquids are there ſubjected to a ſecond aſſimilation, a more complete digeſtion, and again iſſue by a new order of veſſels, larger and leſs numerous.

The lymphatics from every part proceed towards the breaſt, traverſing the glands which they meet with; the lymph continues to be aſſimilated in theſe glandulous organs, where it loſes all its foreign qualities, and aſſumes characters of animalization which render it proper for being mixed with and forming a part of the venous blood.

It is ſeen by this organic diſpoſition, that no foreign ſubſtance can be mixed with our fluids till it has undergone a ſort of digeſtion; and we find in the anatomical ſtructure of the human body a proof that no poiſon can paſs into the blood, and that the theory of metaſtaſis is erroneous.

The lymphatic veſſels, in traverſing the glands, always

always unite into veſſels which are larger and leſs numerous.

The lymphatic glands are more multiplied in parts where there is a greater quantity of liquids to be abſorbed. Thus, for example, they are exceedingly numerous in the abdomen, in the thorax, and around the neck, and are few in number in the limbs.

We ſhall here point out the poſition of theſe glands, and deſcribe the progreſs of the lymphatic veſſels which traverſe them.

387. All the lymphatics of the pelvian limb proceed into the glands ſituated in the ham, the region of the groin and the pelvis.

Two or three very ſmall glands are ſituated in the hollow of the ham, around the poplitean artery; they receive the lymphatics which come from the foot and the leg: *the poplitean glands.*

The lymphatics which proceed to theſe glands are ſituated profoundly between the muſcles, and accompany the arteries: ſome of them ariſe on the foot, *the ſuper-plantar*, aſcend before the tibia, following the progreſs of the anterior tibial artery, traverſe with it the inter-oſſeous ligament, and proceed to the ham. Others, which are more numerous, ariſe on the ſides of the toes, accompany the diviſions of the plantar artery, paſs under the calcaneum *(the plantary)*, aſcend with the poſterior

tibial artery along the poplitean ſide of the leg, and advance as far as the ham. The latter accompany the peronæal artery, and unite with the preceding. They all proceed to the poplitean glands.

The lymphatics which iſſue from the poplitean glands are larger and leſs numerous than thoſe which proceed thither: they are directed towards the inguinal region, and proceed into the glands ſituated in that region.

The *inguinal glands*, the number of which varies from eight to twelve, may be diſtinguiſhed into *ſuperficial* and *profound*. The former are placed between the integuments and the aponeuroſis of the ilio-aponeuroſi-femorian muſcle: the reſt are ſituated below that aponeuroſis. The lymphatics which proceed into the *ſuperficial glands* ariſe, 1ſt, from different parts of the abdominal member; 2d, from the exterior parts of generation; 3d, from the integuments of the abdomen.

1ſt. The firſt accompany chiefly the diviſions of the tibio- and peronæo-malleolar veins; they come from the extremity of the firſt two toes, *the ſubcutaneous* or *ſuperficial*, advance on the tibial edge of the foot, and aſcend along the interior ſide of the leg as far as the knee, where they unite with thoſe which come from the exterior part. The latter ariſe at the extremity of the laſt toes, advance on the peronæal edge of the foot, aſcend with the peronæo-malleolar vein, along the exterior and

poſterior

poſterior ſide of the leg, as far as below the knee, where they turn forwards, unite with a part of thoſe which paſs over the fore-part of the leg, become confounded with the preceding, and aſcend together along the interior ſide of the thigh, as far as the glands of the groin.

The lymphatics which aſcend along the poſterior ſide of the thigh turn inwards, and proceed to the inguinal glands with thoſe which proceed from the nates: *the ſub-cutaneous femoro-poplitean, ſub-cutaneous of the nates.*

2d. The lymphatics of the genital parts proceed: from the præputium, paſſing over the penis, *the ſub-cutaneous of the penis*; from the ſcrotum, *the ſcrotal*; from the great labia, the *ſub-cutaneous vulvar*; from the integuments of the perinæum and the anus, *ſub-cutaneous of the perinæum and of the anus:* all theſe proceed to the inguinal glands.

3d. The lymphatics which proceed from the anterior parts of the abdomen, the *ſub-umbilical*, and from the lateral and poſterior parts of the abdomen, turning round on the bone of the ilium, *circumflex of the ilium*, proceed alſo to the ſuperficial glands of the groin.

The *profound inguinal glands*, which are leſs numerous than the ſuperficial, are ſituated before the crural veſſels. They receive the profound lymphatics of the foot and leg, which, after traverſing the poplitean glands, aſcend along the interior part of

of the thigh, accompanying the femoral artery, the *femoro-poplitean:* the latter unite to thoſe which return from the muſcles of the poſterior part of the thigh, following the courſe of the profound inter-muſcular artery. The profound inguinal glands receive alſo the lymphatics which proceed from ſome muſcles of the abdomen, and which accompany the ſuper-pubian artery.

The lymphatics which have traverſed the glands of the groin proceed afterwards into thoſe of the abdomen.

The glands ſituated in the cavity of the abdomen are very numerous. They may be diſtinguiſhed in the following manner: 1ſt, thoſe which ſurround the iliac veſſels, the *iliac glands*; 2d, thoſe which are found in the cavity of the pelvis, the *pelvian glands*; 3d, thoſe placed around the aorta and the abdominal vena cava, on the bodies of the lumbar vertebræ, the *prælumbar*; 4th, thoſe on the meſentery, the *meſenteric*; 5th, thoſe of the meſo-colon, the *meſo-colic*; 6th, thoſe which ſurround the hepatic, ſplenic, pancreatic, and gaſtric veſſels: *ſub-hepatic, ſplenic, pancreatic, and gaſtric glands.*

1ſt. The *iliac glands* receive a part of the lymphatics furniſhed by the inguinal glands, and which penetrate into the abdomen, paſſing below the crural arch; they receive thoſe which return from the interior part of the ſides of the abdomen, following

following the contour of the ilium, and ſome of thoſe ariſing from the teſticles: in the laſt place, they receive the greater part of thoſe furniſhed by the bladder and the proſtate gland: *the veſical and proſtatic.*

2d. The *pelvian glands* receive the lymphatics which come from the muſcles of the interior part of the thigh; theſe veſſels accompany the ſub-pubian artery, paſſing with it through the ſub-pubian hole, and penetrating into the cavity of the pelvis

Theſe glands receive ſome of the lymphatics which come from the poplitean glands, and which accompany the ſciatic nerve and veſſels. The latter penetrate into the pelvian cavity, paſſing through the ſacro-iſchiatic notch. They receive thoſe which come from the muſcles of the nates, thoſe which come from the cavity of the pelvis and from the interior part of the vertebral canal, the *ſacral*; ſome of thoſe ariſing from the perinæum; the profound lymphatics of the penis, which are furniſhed by the glans, the urethra, and the cavernous bodies: the laſt aſcend along the branch of the iſchium, accompanying the iſchiopenian vein. In the laſt place, the pelvian glands receive the lymphatics which proceed from the cavity of the uterus, accompanying the veins of that organ: theſe lymphatics, the *uterine*, are very apparent in the time of geſtation.

3d. The *prælumbar glands* receive the lympha-

tics

tics of the iliac foſſa and of the lateral parts of the loins, the *ilio-lumbar*. Thoſe furniſhed by the peritonæum and ſome muſcles of the abdomen and of the rachis, the *lumbar*; thoſe which proceed from the tunica vaginalis, the epididymis, and aſcend along the cord of the ſpermatic veſſels. Thoſe which return from the ovarium, the Fallopian tubes, and the ſuper-pubian or round ligament. In the laſt place, they receive thoſe which proceed from the kidneys, the ſuper-renal capſules, and the ureters: *the renal, ſuper-renal, ureteric.*

4th. The *meſenteric glands* are placed between the two laminæ of the meſentery, on the diviſions of the meſenteric arteries. They are flat and of different ſizes: they are much more voluminous in infancy, and ſeem to decreaſe with age.

Theſe glands, which are exceedingly numerous, receive the chyliferous veſſels which open at the interior ſurface of the ſmall inteſtines, and the lymphatics which ariſe at the exterior ſurface of theſe inteſtines.

All theſe veſſels proceed over the inteſtinal canal, enter between the laminæ of the meſentery, croſs each other, form numerous plexus, and proceed to the meſenteric glands.

The lymphatics which iſſue from theſe glands unite afterwards into ſeveral trunks, which proceed into a common canal.

5th. The *meſo-colic glands*, leſs numerous than the

the preceding, are placed between the two laminæ of the meſo-colon. They receive the lymphatics which proceed from the cœcum, the aſcending portion of the colon and its tranſverſe part, *the right colic*; they receive thoſe furniſhed by the left portion of the colon and the rectum, *the left colic*; the lymphatics which iſſue from the meſo-colic glands proceed to the prælumbar glands, and join the crural lymphatics.

6th. The *ſub-hepatic*, *ſplenic*, *pancreatic*, and *gaſtric* glands are ſituated below the liver and the ſtomach, on the diviſions of the aorta, the vena cava, and the ſub-hepatic trunk. Theſe glands continue with the meſenteric and the meſo-colic.

The *ſub-hepatic* glands receive the profound and ſuperficial lymphatics of the liver. The *profound* lymphatics come from every point of the ſubſtance of the liver; they accompany the diviſions of the veſſels of that viſcus, forming plexus around the ſub-hepatic vein, and unite themſelves to the *ſuperficial*. The *ſuperficial ſub-hepatics* ariſe from the concave ſurface of the liver and of the gall-bladder, proceed over the hepatic and cyſtic veſſels, and unite to thoſe which come from the gaſtro-hepatic epiploon.

The lymphatics which proceed from the ſub-hepatic glands paſs obliquely below the duodenum, and proceed to the common reſervoir.

The *ſplenic glands* receive the lymphatics which come

come from the ſubſtance of the ſpleen and its exterior ſurface; they proceed towards the ſciſſure of that viſcus, and form a plexus which ſurrounds the ſplenic veſſels. Theſe lymphatics unite to ſome of thoſe which come from the great epiploon, and proceed together to the *ſplenic glands*. Theſe glands receive alſo the lymphatics which proceed from the great cul-de-ſac of the ſtomach, and which accompany the left gaſtro-epiploic artery.

The lymphatics which iſſue from the ſplenic glands paſs under the pancreas, receive thoſe which return from that viſcus, the *pancreatic*, after having paſſed through the pancreatic glands; and all unite to the ſub-hepatic lymphatics, to proceed into the common canal.

The *gaſtric glands* receive the lymphatics of the ſtomach: the latter may be diſtinguiſhed into ſuperficial and profound.

The ſuperficial ariſe on the exterior face of the ſtomach, and expand below the peritonæal tunic. The profound veſſels have their origin on the interior face of the ſtomach, and proceed between the mucous and the muſcular tunics.

Theſe ſuperficial and profound lymphatics proceed towards the ſmall curvature of the ſtomach, unite to ſome of thoſe which return from the gaſtro-hepatic epiploon, and proceed into the glands ſituated in that part of the ſtomach. The other lymphatics follow the great curvature of that viſcus, accompany

accompany the right gaſtro-epiploic vein, join thoſe furniſhed by the great epiploon, and unite to the ſub-hepatics, to proceed into the common canal.

All the lymphatic veſſels of the pelvian limb, of the ſides of the abdomen, and of the viſcera contained in its cavity, after proceeding to the numerous glands already mentioned, and having ſucceſſively traverſed them, always iſſuing from them in larger and leſs numerous rami than thoſe which entered them, unite into a conſiderable plexus, which gives birth to a common lymphatic trunk: THE THORACIC CANAL.

This canal, which at its origin often exhibits a dilatation, *reſervoir of the chyle* (reſervoir of Péquet, lumbar ciſtern), paſſes between the pillars of the diaphragm, penetrates into the breaſt, aſcends in the poſterior mediaſtinum, along the right part of the bodies of the vertebræ of the back, between the aorta and the prælumbo-thoracic vein: when it reaches the height of the fifth or ſixth vertebra of that region, this canal inclines to the left, paſſes behind the œſophagus and the ſub-ſternal curvature of the aorta, and re-appears towards the left ſide of the body of the third dorſal vertebra. It then aſcends before the great trachelo-ſub-occipitian, is reflected inwards, and proceeds into the left ſub-clavian vein, at the place where that vein unites with the cephalic.

In its paſſage along the breaſt, the thoracic canal

nal receives the lymphatics which proceed from the trunk, from the left part of the head and neck, as well as thoſe of the thoracic limb of that ſide. The lymphatics which return from all theſe parts proceed into the glands ſituated, 1ſt, in the cavity of the thorax; 2d, in the head and neck; 3d, in the thoracic limb.

The firſt, according to their poſition, are called the inter-coſtal, præ-dorſal, ſub-ſternal, cardiac, mediaſtine, bronchial, and pulmonary.

The *inter-coſtal glands* are few in number, and placed between the intervals of the ribs; they receive the lymphatics which return from the ſides of the thorax, accompanying the inter-coſtal veins, and thoſe furniſhed by the coverings of the rachidian prolongation. The glands ſituated between the laſt ribs receive alſo lymphatics ariſing from the ſuperior ſurface of the diaphragm: *the ſuper-diaphragmatic.*

The lymphatics which iſſue from the inter-coſtal glands proceed to the *præ-dorſal glands.*

Theſe glands are placed on the ſides of the bodies of the dorſal vertebræ, near the heads of the ribs; they receive the lymphatics of the œſophagus, which form a plexus along that canal.

The lymphatics which ariſe from the *præ-dorſal glands* proceed directly to the thoracic canal.

The *ſub-ſternal glands*, placed behind the ſternum,

num, *receive* the greater part of the lymphatics furniſhed by the convex ſide of the liver and the thoracic ſide of the diaphragm.

The *firſt*, *the ſuper-hepatics*, form three principal branches: one, called the *median*, is formed by the union of ſeveral rami, which ariſe on the convexity of the liver, and unite to form a branch which proceeds along the right ſide of the middle ligament of that organ. This branch traverſes the diaphragm, aſcends along the anterior mediaſtinum, and proceeds to the ſub-ſternal glands.

The other two branches proceed towards the lateral ligaments, and unite with the ſub-ſternal and ſome of the inter-coſtal.

The *ſecond*, *the ſuper-diaphragmatics*, are confounded with the ſub-ſternal.

The lymphatics *furniſhed* by the ſub-ſternal glands accompany the veins of the ſame name, have frequent communications with the inter-coſtal and ſuper-hepatic lymphatics, and proceed into the thoracic canal, near to its termination.

The *cardiac glands*, ſituated under the curvature of the aorta, receive the lymphatics which return from the pericardium and the heart. Thoſe which return from the pericardium, *the pericardian*, ariſe on its interior ſurface, and unite with thoſe which return from the heart. The *cardiac lymphatics* form two trunks, *one* of which accompanies the right cardiac artery, aſcends before the aorta,

paſſes below the bronchiæ, and terminates at the ſummit of the thoracic canal. The *other*, which is larger, paſſes between the aortic and the pulmonary artery, traverſes the cardiac glands, and proceeds, in like manner, to the thoracic canal.

The *mediaſtine glands*, ſituated between the laminæ of the poſterior mediaſtinum, receive ſome lymphatics which come from theſe laminæ, the *mediaſtine*, and the *ſuperficial* of the lungs. The latter proceed from the ſurface of the lungs, and form numerous reticulations, which give birth to branches that proceed to theſe glands.

The *bronchial* and *pulmonary glands* are found on the diviſions of the bronchiæ, and on the lungs. They are large, blackiſh, and exceedingly numerous; they receive the *profound* lymphatics of the lungs. Theſe lymphatics proceed from the ſubſtance of the lungs; they accompany the veins, traverſe the bronchial glands, paſs behind the poſterior mediaſtinum, and unite in ſeveral branches. Theſe branches proceed, on the left ſide, into the thoracic canal, and on the right into a lymphatic trunk, which communicates with the right ſub-clavian vein: the *brachio-cephalic trunk*.

The glands of the head are diſtinguiſhed, according to their poſition, by the names of, the maſtoidian, parotidian, ſub-zygomatic, maxillary, and ſub-lingual.

The *maſtoidian glands*, few in number, are placed around

around the maſtoid apophyſis; they receive the lymphatics which proceed under the integuments of the poſterior part of the head.

The *parotidian glands*, ſituated around the parotid gland, receive the lymphatics furniſhed by the integuments of the lateral parts of the head, and accompany the temporal veins.

The lymphatics which proceed from theſe glands unite with thoſe of the anterior part of the neck.

The *ſub-zygomatic glands* receive the lymphatics which accompany the profound temporal arteries.

The *maxillary glands*, placed on the ſides of the jaw, *receive* the lymphatics which proceed from the integuments of the forehead, *the frontal*. Theſe lymphatics deſcend towards the large angle of the noſe, receive thoſe furniſhed by the eye-lids and the orbit, the *palpebral* and *orbitar*, and unite to the ſub-cutaneous of the face: the latter proceed from the ſides of the noſe, the cheeks, and the lips, accompanying the labial vein.

The lymphatics which *iſſue* from the maxillary glands unite with thoſe of the region of the neck.

The *ſub-lingual glands*, placed under the tongue, receive the lymphatics which proceed from the tongue, the *lingual*; from the palate, *the palatine*; from the back part of the noſtrils, *the naſal*; from the orbits, *the orbitar*; and from the pharynx, *the pharyngian*. All theſe lymphatics follow the divi-

ſions of the veins, and with the preceding join thoſe of the anterior part of the neck.

The glands of the neck are diſtinguiſhed into trachelian and cervical.

The *trachelian glands*, which are very numerous, and placed beneath the ſkin, ſurround the trachelo-ſub-cutaneous veins and the cephalic trunk; they receive the lymphatics which return from the glands of the head, and deſcend on the ſides of the neck, where they form a plexus. Theſe lymphatics unite with ſome of thoſe furniſhed by the integuments of the face, the *ſterno-coſtal of the thorax*, and form two or three branches, which on the left ſide proceed into the thoracic canal, near its termination, and on the right into the brachio-cephalic trunk.

The *cervical glands*, which are ſituated more profoundly, receive the *profound or inter-muſcular* lymphatics of the region of the neck, which are united to ſome of the *dorſal* and to the *ſub-ſcapular*.

The lymphatics which return from theſe glands join the *trachelian*, and on the left ſide proceed to the thoracic canal, and on the right to the brachio-cephalic trunk.

The *glands of the thoracic limb* are ſituated towards the articulation of the elbow, in the hollow of the arm-pit, around the ſcapula, and under the clavicle.

The *axillary glands* are very numerous; they are

are placed in the hollow of the arm-pit, under the axillary veſſels. They receive a great number of lymphatics:

1ſt. Thoſe which return from the ſterno-coſtal ſurface of the thorax, the mammillæ, the *mammary*, and from the muſcles of that region, *the inter-muſcular*.

2d. Thoſe furniſhed by the integuments of the back, *cutaneous of the back*, and the muſcles of that region, the *inter-muſcular of the back*.

3d. Thoſe which return from every part of the thoracic limb.

The latter may be diſtinguiſhed into *ſuperficial* and *profound*: the former follow the diviſions of the veins; the latter accompany the arteries.

The *ſuperficial* ſpread over the two faces of the limb, and are thus divided into *ſuper-palmar* and *ſub-palmar*.

The *ſuper-palmar* ariſe from the fingers, and aſcend on the back of the hand, along the exterior ſide of the fore-arm, where they ſeparate: ſome of them proceed towards the cubital edge of the fore-arm, paſs below the elbow, turn inwards, and proceed towards the bend of the arm. The reſt take a direction towards the radial edge of the fore-arm, and proceed in like manner to the bend.

The *ſub-palmar* lymphatics ariſe at the extremities of the fingers, ſpread over the palmar face of the hand and of the fore-arm, and join the preceding towards the bend of the articulation.

All theſe lymphatics aſcend together along the interior ſide of the arm, and proceed to the axillary glands. Some of theſe veſſels traverſe one or two ſmall glands ſituated at the middle part of the interior ſide of the arm.

The *profound* or *inter-muſcular* lymphatics ariſe from the fingers, accompany the radial, cubital, and inter-oſſeous arteries, and proceed in part to the glands ſituated in the bend of the arm, the *humero-cubital*, and to the *axillary glands*.

Theſe glands receive alſo the lymphatics of the poſterior ſide of the arm, the *humero-olecranian*, and thoſe which come from the ſhoulder: the latter traverſe ſome glands ſituated in that part.

The lymphatics which *iſſue* from the axillary glands paſs under the clavicle, and proceed, in part, into the *ſub-clavian glands*: they then unite with thoſe which come from the head and the neck, and on the left ſide they all proceed into the thoracic canal, near its termination, and on the right into the brachio-cephalic trunk.

The *brachio-cephalic* trunk is formed by the union of the lymphatics which proceed from the right ſide of the head, from the thoracic limb of the ſame ſide, and from ſome lymphatics of the thorax and the liver. This trunk is very ſhort: it is ſituated obliquely behind the clavicle, and proceeds into the right ſub-clavian vein.

SYSTEM

SYSTEM OF GENERATION.

388. The ſyſtem of generation conſiſts eſſentially of the reſervoir of the ſemen and ova (ovarium), and the organ which ſecretes the ſubſtance proper for fecundating theſe parts (anthera, milt, teſticle.)

The ovarium, as well as the organ which ſecretes the fecundating matter, is accompanied by a greater or leſs number of acceſſory parts, which vary the mode of re-production in the different claſſes of living beings.

The ovarium is found in all vegetables and animals whoſe organs of generation are known.

No animal has ever more than two ovaria; but a great number are generally found in the ſame plant.

In animals, the ovarium is almoſt always placed in the abdomen*: in plants it generally ſupports a hollow ſtyle: this ſtyle terminates in a dilatation, *(ſtigma)* moiſt, and often unctuous, on which the farina or fecundating duſt is depoſited.

Oſſeous fiſhes and the molluſca cephalopoda have only two bunches of eggs, which they can inſtantaneouſly depoſit.

* In *muſcles* the eggs are found between the folds of the branchiæ.

Inſects have ſeveral oviducts, and ſeveral ſtrings of eggs; but the very complex organization of theſe animals is as yet little known.

Birds have only one ovarium, and an oviduct which proceeds into the *cloaca*.

In reptiles there are two ovaria and two oviducts*.

Two ovaria and two oviducts, which proceed into a ſort of uterus, are found in cartilaginous fiſhes, ſuch as the ray and the ſhark†.

In a word, all the females of the mammalia have two ovaria and two oviducts (*tubes*), an uterus, and a vaginal conduit.

The conſiderable number of eggs or ſeeds contained in ſome ovaria exhibits an example of extreme fecundity. The eggs contained in the ovaria of certain fiſhes, ſuch as the gadi (cod, whiting, &c.), have been eſtimated at more than nine millions. Some vegetables alſo afford inſtances of extraordinary fecundity: 32,000 ſeeds have been counted in the poppy, and more than 40,000 in a tobacco plant.

The number of germs contained in the ovaria

* In the frog and ſnails the ovaria form two large bunches, kept together by a ſlimy matter; and the oviducts are long and twiſted, and form a great many circumvolutions.

† The oviduct of theſe animals exhibits a whitiſh glandulous body, the aperture of which contracts, and makes the eggs aſſume a ſquare form.

of

of warm-blooded animals does not appear to be ſo conſiderable; and it ſeems that the facility of reproduction decreaſes according as the organs of generation become more complex.

Each ſeed and each egg contains a germ*, and the nouriſhing organs deſtined to provide for its firſt expanſion. The ſeeds are contained in a triple covering, incloſed for the moſt part in a pericarpium of a different nature†.

The ova in oſſeous fiſhes are covered by a thin pellicle; in cartilaginous fiſhes they have a brown or gold coloured covering, coriaceous and fibrous; in birds, ſerpents, and tortoiſes, they are covered by a cretaceous covering, of greater or leſs thickneſs: this calcareous covering is formed in the *cloaca* by the depoſit left by the urine.

In the mammalia, the ovarium has the appearance of a glandulous body, which contains round tubercles: it is covered by a membrane of a compact tiſſue. In theſe animals the ſummit of the tube, ſhaped like the wide end of a trumpet, is oppoſite to the ovarium; the body of it is very narrow, and it proceeds obliquely into the uterus. In ruminating animals the tube, which is broad at the baſe, is confounded with the matrix,

* There are two or more in the ſeed of the *pincimbra*, the *citrus aurantium*, the *eronimus europeus*, &c.

† Capſules, pods, huſks, ſhells, apples, berries, nuts, &c.

and

and makes it appear as if divided: the fœtus is in part developed in the tube.

The parietes of the uterus are very thick, and of a fibrous tiſſue exceedingly compact. This organ has a tranſverſe aperture, which correſponds to the bottom of the vagina.

In the didelphis, the uterus, which is very ſmall, exhibits, behind and on the ſides, two apertures correſponding to two bifurcations of the vagina: it is by theſe means that fecundation is effected. The anterior part of the uterus has an aperture, in general imperceptible, through which the embryo always proceeds, at an early period, to paſs into a membranous bag, where the mammellæ are ſituated.

The vaginal conduit is membranous, full of folds, and covered by a thick mucous tunic furniſhed with glands. It exhibits before, and at the top, the entrance of the *meatus urinarius*, on the ſides of which are two membranous folds (*the nymphæ*). Before the meatus urinarius is the *clitoris*, the ſize of which varies; in apes it is very long, in the elephant it is nearly a foot in length, and in the caſtor and water rat projects outwards.

At the entrance of the vaginal conduit the ſkin forms ſeveral large folds: in woman, this entrance (*vulva*) is partly cloſed beyond the meatus urinarius by a membrane (*the hymen*) which has not been obſerved in the other mammalia.

The

The orifice of the vulva is at a greater or leſs diſtance from the anus: in the elephant it approaches very near to the navel.

In animals without vertebræ, the exterior orifice of the genitals often exhibits a very ſingular poſition: in the aplyſiæ it is found on the right ſide of the body; in the ſlug, and ſnails with a ſhell, it is under the right tentaculum; in the cruſtacea, at the thigh of the claw before the laſt; in the field ſpider, under the mouth; in leeches, towards the anterior and lateral third of the body, &c.

389. The ſyſtem of generation in the male conſiſts eſſentially in the organ which produces the fecundating duſt or liquor: *the anthera, milt, or teſticle.*

This organ is found in all living beings whoſe mode of generation is known.

The number of the antheræ is exceedingly various; in fiſhes there is only one milt; moſt of the other animals have two teſticles.

In inſects the genitals of the male are exceedingly complex; they exhibit ſeveral parts, which ſeem to correſpond to the teſticles, to the epididymis, the ſeminal veſſels, and the vaſa deferentia: they have alſo a ſingle or double penis, membranous, erective, and of different forms. This penis has frequently on the ſides an apparatus like two ſcales, which ſeparate to open the vulva.

It

It is ſo difficult to obſerve properly the organ of generation in theſe ſmall animals, that it is ſtill little known: we are only aſſured that it is very complex.

In vertebral animals, the milt or teſticles are primitively ſituated in the neighbourhood of the kidneys; they conſiſt of an aſſemblage of long capillary veſſels, rolled over each other, and along which the fecundating liquor is ſecreted. Theſe organs are enveloped by a particular tunic (*tunica albuginea*). They have always above them another ſmaller body (*the epididymis*), formed by a collection of coarſer veſſels, through which the liquor paſſes in its way from the teſticle.

The epididymis is then continued by a *vas deferens*.

Theſe in general are nearly the whole of the organs of generation in fiſhes, reptiles, and birds; their teſticles vary in ſize, and in the ſeaſon of copulation aſſume a conſiderable increaſe of ſize.

They remain nearly of the ſame ſize in moſt of the mammalia, and particularly in thoſe which copulate at all ſeaſons. In the rodentia they are renewed.

During the long ſleep of animals ſubject to a ſtate of torpor in the winter ſeaſon, the teſticles become much larger, while the reſt of the body grows thin; ſo that when they awake they find themſelves ſtrongly excited to the act of reproduction.

In

In a part of the mammalia, theſe organs remain in the abdomen; in others they deſcend through the inguinal ring, and carry with them a portion of the peritonæum by which they were covered, and which then forms to them a ſecond tunic, *the peritonæal* (the elytroid).

The teſticles when they deſcend beyond the abdomen are received in a common covering, formed by a fold of the ſkin *(the ſcrotum)*. Each of them is covered alſo by a third membrano-muſculous wrapper *(the dartos)*, and ſupported by a muſcle *(the cremaſter)*.

The aperture of the inguinal ring, which in man is generally ſhut, remains open in the other animals with a bag, and the teſticles by the contraction of the dartos can enter the abdomen.

Animals which keep their teſticles in the abdomen, ſuch as the rodentia, moles, ſhrew-mice, &c. are endowed with the genital function in a high degree.

In ſome birds, ſuch as the oſtrich and the greater part of the palmipeda; in fiſhes with fixed branchiæ, ſuch as the ray and the ſquali; in ſeveral reptiles, and in ſerpents, the vas deferens is continued with an erective tubercle, which is often bifid, and forms a ſort of penis. In birds this penis has on it a furrow.

The penis does not really exiſt but in the mammalia: in theſe animals the vaſa deferentia are prolonged

prolonged as far as the canal of the urethra, and continue with it.

In moſt of the mammalia, the vaſa deferentia have a communication, in their paſſage, with two ſhort canals, which proceed into two kinds of veſicles *(the ſeminal)* ſituated at the bottom of the bladder.

The ſeminal liquor ſeems to flow back into theſe veſicles, and to remain there as the bile does in the gall-bladder.

In carnivorous animals the ſeminal veſſels are wanting; in the greater part of the ruminantia they are ſmall, and in apes large; in the rodentia they are of conſiderable extent, and partieularly in the hedge-hog, which has them divided into ſeveral lobes.

The ardor for the venereal act ſeems to be in the ratio of the ſize of the teſticles.

At the root of the penis in the mammalia is a gland *(the proſtate)*, which varies in its form and ſize. This gland pours the product of its ſecretion into the urethra, which is cloſe to the aperture of the ejaculatory conduits.

The canal of the urethra is enveloped, on the ſides, by two bodies of a compact and ſpongy texture *(the cavernous bodies)*, in which the blood accumulates to produce erection.

The cellular tiſſue of the cavernous bodies ſeems to oſſify with time in ſeveral of the carnivorous animals, ſuch as the dog, wolf, fox, &c. which

which renders the canal of the urethra ſometimes oſſeous.

The penis receives ſeveral muſcles which are affixed to the pelvis: thoſe called the *erectors* do not ſerve for that uſe which the name ſeems to indicate.

The glans, or termination of the penis, in the different animals, is ſuſceptible of a ſort of erection, and exhibits a great variety of forms: in apes it is pointed, and cut into the form of a fleur-de-lys or muſhroom; in the ruminating animals it is very ſlender; and in the rhinoceros it is ſhaped like a double bell-flower: in the didelphis it is forked, &c. The penis of dogs has a projection before, which is ſtopped in the vagina by a roll; and in conſequence of this conformation theſe animals remain coupled together after coition as long as the erection continues.

The ſurface of the glans is generally ſmooth; but in the genus of the cat, and in ſerpents, it is covered with ſtrong aſperities*.

In bats, apes, and man, the penis remains ſuſpended without; it is enveloped, as far as the root of the glans, by the ſkin, which in that place forms a fold (*the præputium*) proper for covering the latter part: the præputium of man is retained at the root of the glans by a frænum.

* This ſtructure is in all probability the cauſe of thoſe cries which the cat emits during coition.

In

In the other mammalia, the penis diſappears by means of particular muſcles, and remains habitually in a membranous ſheath fixed to the abdomen.

The exterior organs of generation in the males are for the moſt part placed in the ſame parts as in the females; but in inſects they are ſometimes at a conſiderable diſtance from each other, which renders neceſſary a very ſingular mode of copulation: thus, in ſpiders, the organs of the male are in the feelers, and thoſe of the female are at the bottom of the abdomen.

390. The germs ſeem to be fecundated by the contact of the prolific ſubſtance of the male organ.

In ſpinous fiſhes, the germs are fecundated after they have been depoſited by the female: in other animals, as well as in plants, their fecundation is effected in the ovarium.

The germs are always united to a peculiar vaſcular organ (*cotyledon*, *placenta*, &c.) deſtined to aſſimilate the materials of nutrition, and to diſtribute them to the new being until it has acquired a certain ſtate of ſtrength.

In vegetables, this apparatus derives its nutritive ſubſtance, in a great meaſure, from without.

In all animals, the mammalia excepted, the germs and nutritive apparatus are incloſed in the ovum, along with the materials of nutrition neceſſary for the firſt increaſe. The ova may then be hatched

hatched either without or within the body of the mother, until the embryo has acquired ſufficient ſtrength to burſt its covering, and to enjoy a new exiſtence *(oviparous.)*

In the mammalia the germ remains fixed to the mother by the apparatus of nutrition, which continues to ſupply the nouriſhing fluids, neceſſary for the development of the germ and of its placenta; and at a fixed period ſhe depoſits them. The new being then remains attached to the mother by the new care of lactation which ſhe beſtows on it *(viviparous.)*

391. In vegetables, when fecundation is effected, the eſſential and acceſſory parts which concurred towards this end become deſiccated and drop off.

The germ at firſt appears as a ſmall viſcous body, enveloped in a thin pellicle, containing a mucilaginous liquid in which it floats. This apparatus increaſes after fecundation, and ſucceſſively expands the other parts which conſtitute the ſeed.

In the ripe ſeed, the germ is generally a ſmall oblong body, placed in general near the centre. The extremity of the germ, neareſt to the ſurface of the ſeed, is terminated by a ſmall tubercle, which becomes the radicle; the extremity which correſponds nearly with the centre of the ſeed terminates in a point, and becomes the plumula.

The germs are accompanied by one or two cotyledons, with which they are cloſely united.

When there is only one cotyledon, it ſeems to be a prolongation of the germ. When there are two, they envelop the germ, and are united by filaments which proceed near to the radicle of that embryo.

The cotyledons expand into lobes, or give birth to ſeminal leaves.

The germ and cotyledons are ſurrounded by a ſubſtance which does not adhere to theſe parts, and which is called the *periſperma*. The periſperma is either farinaceous, as in the gramineous plants, or corneous, as in coffee, or even ligneous, as in the umbelliferous.

In ſome ſeeds, a ſmall body called the *vitellus* is obſerved between the periſperma and the cotyledons.

All theſe parts of the ſeed are incloſed in a triple covering, the laminæ of which have been diſtinguiſhed by the names of *epidermis*, *arillus*, and *teſta*. This covering is interrupted only by a ſmall tubercle, by means of which the ſeed is continued with the plant. After the ſeed is ripe, and when it has detached itſelf, a ſmall depreſſion called the *umbilicus* remains in the place where the tubercle was inſerted. The ſeed is always ſupported or ſurrounded by a receptacle called the placenta; and in both theſe caſes it is either naked or ſupported by the *calyx* which has remained, or is encloſed in a covering called the *pericarpium*.

The form and conſiſtence of the pericarpia are various: their varieties are diſtinguiſhed by the names

names of capſule, pod, huſk, ſhell, apple, berry, nut, &c. they conſtitute the fruit.

392. The nutritive apparatus of the germ of birds (of the chicken for example) conſiſts eſſen- in the membrane of the yolk, which is continued with the inteſtines of the embryo.

The embryo is incloſed in a membrane (the *amnios*), which ſecretes a liquid in which it floats: this membrane adheres to that of the yolk.

The membrane of the yolk is a covering of a very fine texture, and contains an oily and albuminous liquor. This membrane is continued with the firſt inteſtines, and ſupports the arteries which it receives from the embryo, and the veins which it ſends to it.

When the germ is fecundated, and a circulation is eſtabliſhed between the veſſels of the embryo and thoſe of the membrane of the yolk, it is obſerved that this membrane inſenſibly abſorbs the albuminous liquid (the white) of the egg, which paſſes through the yolk. This membrane then abſorbs the yellow liquid itſelf; it aſſimilates theſe materials, and tranſmits them to the embryo to promote its firſt expanſion.

In this mode of development, the apparatus of the egg decreaſes in volume, according as the young animal increaſes in ſize.

Though the development of the egg in reptiles and white blooded animals has not been obſerved with the ſame care as in the domeſtic fowl, every thing ſeems to announce that it is effected, in general, in a ſimilar manner.

393. The nutritive apparatus of the fœtus, in the mammalia, conſiſts; 1ſt, in a ſort of cake *(placenta)*, or in a greater or leſs number of lobes * *(cotyledons)* of a vaſcular and parenchymatous texture, thick and compact; 2d, in a double membrane, which envelops the fœtus, and adheres to the placenta or to the cotyledons; 3d, in ſeveral orders of veſſels, which extend from the fœtus to the placenta, forming a cord.

The placenta or the cotyledons adhere by one of their ſurfaces to a part of the ſides of the uterus, without any continuity of the veſſels being eſtabliſhed †.

The placenta is every where fixed; and when the egg remains in the ovarium, or in the tube, or when it proceeds to the abdomen, the placenta ſtill adheres to all theſe parts, and derives juices from them for its increaſe.

The membrane which envelops the fœtus ex-

* The number of which amounts ſometimes to nearly fifty.

† The fineſt injections have never been able to paſs from the uterus to the placenta, nor from the placenta to the uterus.

ternally

ternally (the *chorion*) is the thickeſt; it adheres to the placenta or to the cotyledons, throughout a part of its extent.

The interior membrane, which is thinner (the *amnios*), adheres to the former by a looſe cellular tiſſue; it ſecretes and contains the water in which the fœtus is immerſed.

Between the chorion and the amnios is another membrane, in the form of an elongated tube (the *allantoid*). This membranous canal is continued with a veſſel (the *urachus*) which traverſes the umbilical cord, and proceeds into the bottom of the urinary bladder. The urine of the fœtus flows along the urachus, and is depoſited in the allantoid.

This urinary apparatus, which is very ſtriking in the ſolipeda and the ruminantia, exiſts only in rudiments, and ſeems to be of no uſe in ſeveral other quadrupeds, and in man.

The umbilical cord is compoſed of ſanguiferous veſſels, the urachus, nerves, and the membrane which forms a covering to theſe parts.

The blood of the fœtus is diſtributed to the placenta by two arteries (the umbilical), which are the two principal diviſions of the iliac. The blood returns from the placenta by a large vein (umbilical), which when it reaches the fœtus proceeds to the liver, and divides into two branches:

one of theſe is diſtributed in the liver, and the other proceeds to the vena cava.

The vein, for the moſt part, is twiſted round in a ſpiral form on the arteries.

394. In the human ſpecies, the ſame apparatus of reproduction is found as that which is obſerved in the greater part of the mammalia.

The teſticles, which are nearly of the ſhape and ſize of a pigeon's egg, are two in number; they are ſituated without the abdomen, and below the pubis, in a fold of the ſkin called the *ſcrotum*.

The ſkin of this part, which in adults is wrinkled and covered with hair, has in the middle a median line (*raphe*), which ſeems to be a ſcar, and which extends from the root of the penis as far as the anus.

Beneath the ſkin, is found a membrane of a cloſe cellular tiſſue, in the midſt of which are a few very thin and very pale carneous fibres, the *dartos*. This ſub-cutaneous muſcle forms a covering for each teſticle, and corrugates the ſkin of the ſcrotum.

This muſcle covers the very thin, reddiſh expanſion (*elytroid*) which ſends out another particular muſcle (*cremaſter*).

Below theſe parts is a membrane of a compact tiſſue, in the form a tunic, the *peritonæal* (elytroid or

or vaginal). This membrane adheres without to the neighbouring parts by a lax cellular tiſſue: its interior ſurface is ſmooth; it ſecretes a ſerous matter, and covers the teſticle without adhering to it.

In the laſt place, the proper ſubſtance of the teſticle is enveloped by a white membrane (*tunica albuginea*) of a thick and compact tiſſue. This membrane is ſmooth and ſerous on the outſide; and gives birth interiorly to a very great number of fibres or laminæ, which interſect each other in the whole ſubſtance of the teſticle.

The proper ſubſtance of the teſticle exhibits nothing but a vaſcular reticulation, exceedingly fine, and of a grayiſh colour. This reticulation ſeems to ſpin itſelf out into a capillary conduit of great fineneſs and length, and to be formed only of ſeveral veſſels of the utmoſt tenuity, folded back on themſelves: *the ſeminiferous conduits.*

Theſe conduits terminate at a whitiſh, compact, oblong body (of Highmore) adhering to the tunica albuginea, and which is found at the ſummit of the teſticle behind. This body ſeems to be formed by the union of the laminæ ſent out by the interior ſurface of the tunica albuginea. It is pierced with ſeveral ſmall apertures, at which the ſeminiferous conduits ſeem to terminate.

This whitiſh body eſtabliſhes a communication between the teſticle and another oblong grayiſh

body, which runs along the poſterior edge of the teſticle (the *epididymis*), and which forms nearly the fourth of its volume.

The epididymis exhibits a vaſcular tiſſue, ſimilar to that of the teſticle: it is formed of one exceedingly fine conduit (much leſs ſo however than the preceding) of about fifteen or eighteen feet in length, folded back on itſelf: it receives the ſperm which comes from the teſticle, traverſing the whitiſh body.

The epididymis is continued downwards and backwards with a conduit (*vas deferens*) larger than the preceding. This conduit is thick, whitiſh, ſolid, and, as it were, cartilaginous: it aſcends on the ſide of the epididymis, and proceeds towards the inguinal ring, accompanying the veſſels of the teſticle; it then ſeparates from them, is reflected into the pelvis, paſſes over the ſides of the bladder, and advances towards the bottom of that organ to join itſelf to its fellow, at a very acute angle.

In that place, the *vaſa deferentia* exhibit, on their exterior ſides, an aperture which communicates into a blind membranous canal about four fingers breadth in length. This canal (*ſeminal veſicle*), which is at firſt narrow, becomes afterwards broader, and at the bottom its width is equal to about a finger's breadth. It is of a whitiſh gray colour, folded back on itſelf, and incloſed in a cellular tiſſue which wrinkles it, gives it a knotty aſpect,

pect, and fixes it a little behind and on the ſides of the bottom of the bladder. The interior ſurface of this veſicle is mucous; it exhibits a great number of cells, or cul-de-ſacs, formed in its ſubſtance.

The ſperm, after paſſing through the *vaſa deferentia*, flows into the ſeminal veſicle, where it remains. In ejaculation, it iſſues from that reſervoir and paſſes into two conduits (*ejaculatory*) which are narrower than the *vaſa deferentia*, of which they are a continuation. Theſe conduits aſcend from without inwards, before the bladder, traverſe a large gland (the *proſtate*), open obliquely at the entrance of the canal of the urethra, by two apertures which are directed forwards, and are ſituated on the ſides of a ſmall fold or longitudinal ridge: *the urethral ridge.*

In the fœtus, the teſticles are ſituated in the abdomen, below the kidneys; they are fixed, and covered by a fold of the peritonæum.

Towards the end of pregnancy, the teſticle in the fœtus proceeds towards the ring, deſcends into the ſcrotum, and carries with it a portion of the peritonæum, which ſerves it as *a covering* (*peritonæal*).

The teſticle receives an artery which comes directly from the aorta, and very fine nerves: it ſends out two tortuous veins, lymphatic veſſels, and vaſa deferentia.

This aſſemblage of parts forms a *cord* (*of the*

teſticular veſſels), which during the firſt years of life ſeems to be covered by the prolongation of the peritonæum, carried with it by the teſticle, and there remains towards the ring an aperture which communicates with the abdomen: but this aperture is ſoon cloſed up; the peritonæal covering diſappears in this place, and the cord is ſurrounded only by the cellular tiſſue. This cord is ſtill covered by a thin muſcle, which ſeems to ariſe from ſome fibres of the lumbo-abdominian. This muſcle traverſes the ring, envelops the cord of the teſticular veſſels, and loſes itſelf on the peritonæal tunic. It can ſhorten the cord, and *ſuſpend* the teſticle (the *cremaſter*).

The proſtate gland is below the neck of the bladder. Inferiorly, it envelops the root of the penis. This gland, the width of which is about two or three fingers breadth, ſeems to be formed of a compact granulated tiſſue; it ſecretes a viſcous whitiſh liquor, which is poured through five or ſix ſmall holes into the canal of the urethra, near the aperture of the ejaculatory conduits.

395. The penis is eſſentially formed by two thick ſpongy (*cavernous*) *bodies* which ſeparate behind, and are attached by two thin portions towards the iſchio-pubian region of the pelvis. Theſe two portions approach each other, become confounded and form only one part, which is continued

nued along the penis, and terminates at the root of the glans.

The cavernous body is compoſed of a cellular or areolar tiſſue, enveloped by a thick membrane. The cells can be filled with blood; and when this liquid is retained there in large quantity, the cavernous body ſwells up, becomes hard, and produces erection.

The cavernous bodies, which cover the canal of the urethra, are enveloped behind by two muſcles which are attached within the tuberoſity of the iſchium, and advance on the roots of that body as far as the middle of it. Theſe muſcles tend to move the penis downwards: *the iſchio-cavernous.*

The canal of the urethra, which extends from the aperture of the bladder to the extremity of the penis, has the form of an *ſ*; it is broad behind, becomes narrow in the middle, and again widens towards the place which correſponds to the glans penis: *the foſſa navicularis.*

The ſides of this canal are thick and of a compact texture behind, in the part which correſponds to the proſtate gland; further forwards they are contracted, and for about two finger-breadths become thin and membranous; in the reſt of its extent this canal is ſpongy, like the cavernous bodies, and appears, like it, to contribute towards erection. The ſpongy tiſſue begins by a ſort of dilatation, *bulbous part*; it becomes wide before, and forms the

the glans, which is covered with glandulous follicles.

The bulb of the urethra is covered, inferiorly and behind, by a broad thin muſcle, which extends from the ſphincter of the anus as far the root of the penis; it compreſſes and contracts the portion of the urethra on which it is applied, and may thus accelerate the courſe of the urine and the ſemen: *the bulbo-cavernous.*

Behind this muſcle, and on the ſides, there are two ſmaller ones ſituated in a tranſverſe direction, the *iſchio-perinæan* (tranſverſe of the perinæum); they are fixed to the interior face of the branch of the iſchium, and expand behind the bulbo-cavernous. Theſe muſcles can dilate the bottom of the canal of the urethra.

The interior ſurface of this canal is lined with a mucous, reddiſh, plaited membrane, which exhibits glandulous follicles, and ſeveral ſmall apertures.

The penis receives a great many nerves and arteries; the blood returns by a large vein which proceeds over the back of that part.

The ſkin of the penis is thin, and is united to it by a lax cellular tiſſue, which is not adipoſe. When it reaches the glans, it is folded back on itſelf, and produces an expanſion, the *præputium*, which covers that part and adheres to it inferiorly by a *frænum*. The ſkin which covers the glans is furniſhed

niſhed interiorly with a great number of ſebaceous glands.

396. The ſemen which is found in the vaſa deferentia and the veſicles is ſerous and of a yellowiſh colour: it has not been analyſed in this ſtate. At the time of ejaculation, it mixes with the product of the proſtate gland, which is white and viſcid.

The mixture of theſe two liquors, expelled by ejaculation, has been carefully analyſed by C. Vauquelin: it is whitiſh, viſcous, and heavier than water: it emits an odour like that of the flowers of the cheſnut tree, and that emitted when bones are ſawn; it has a ſaline and alkaline ſavour; it becomes fluid in the air, and covered with a pellicle, and depoſits regular and tranſparent cryſtals of phoſphate of lime. It is inſoluble in water, but diſſolves in weak acids and in alkalies: it turns acid by expoſure to the air.

A hundred parts of ſemen, according to Vauquelin's analyſis, gave:

Water	90
Animal mucilage	6
Phoſphate of lime	3
Soda	1

Microſcopic examination has diſcovered in the human ſemen an innumerable quantity of oblong animalcula,

animalcula, which were obſerved by *Buffon*, *Needham*, *Spallanzani*, &c.

397. The female parts of generation exhibit exteriorly a fiſſure, *vulva*, which extends from the pubis to within an inch of the anus.

The pubis, in that part, at the age of puberty, is covered with hair, and exhibits a prominence of a denſe, adipoſe, cellular tiſſue.

On the ſides of the vulva, the ſkin forms two folds, *the large labia*, which are exceedingly ſtrong, covered on the outſide by hair, and united at their two extremities, *commiſſuræ*.

The poſterior commiſſura exhibits a ſort of frænum, *fork*.

Below the anterior commiſſura is obſerved a round longiſh tubercle *(clitoris)*, formed by the union of two bodies of a compact areolar tiſſue, analogous to the cavernous bodies of the male, and ſuſceptible of a ſort of erection.

Theſe cavernous bodies extend upwards, ſeparate, and form two thin prolongations, which are fixed behind to the iſchium and the pubis. They are each covered by a muſcle analogous to the iſchio-cavernous of the male.

The clitoris is ſurrounded by a fold of the ſkin which adheres, at the bottom, by a ſort of frænum, and is free in the reſt of its extent.

Anatomiſts

Anatomiſts have had ſome reaſons for comparing this part to the penis of the male; it is the principal ſeat of the pleaſure experienced during the act of coition.

The clitoris is proportionably longer in newborn children, in whom it often projects beyond the large labia. In ſome females it exhibits a very conſiderable prolongation: the extraordinary length of the clitoris, added to other peculiarities in the organs of generation, has given riſe to the pretended tales reſpecting hermaphrodites.

Within the large labia there are two other folds of the ſkin, leſs extenſive than the former, called *the leſſer labia* or *nymphæ*.

Below the nymphæ and the clitoris is the aperture of the canal of the urethra (*meatus urinarius*), about two fingers' breadth in length, very broad and horizontal.

The large and leſſer labia open during parturition; become effaced, and increaſe the enlargement of the vulva.

398. The vulva forms the entrance of a conduit which proceeds to the uterus: *the vulvo-uterine* (vagina).

The vaginal conduit, which is about five inches in length and one in breadth, is in part cloſed towards its entrance by a thin membrane (*the hymen*), of a circular form or ſhaped like a creſcent, which towards

towards its lower part is furniſhed with an ovoid aperture more or leſs narrow.

This membrane ſeems conſtantly to exiſt; but it may be broken or deſtroyed by a great many particular circumſtances, eſpecially at an early age, at which period it is very thin. When entire, it is a ſign of virginity; but even when wanting, it is difficult to determine whether it has been broken by the introduction of a penis or by any other cauſe.

When this membrane has been torn, there are found in its place from three to five ſpongy, reddiſh, unequal tubercles, which are conſidered as the tumefied remains of it: *carunculæ myrtiformes.*

The vulvo-uterine conduit proceeds obliquely upwards, under the arch of the pubis, into the excavation of the leſſer pelvis; enters the canal of the urethra and the bladder before, and the rectum behind.

The ſubſtance of this canal is formed in a great meaſure by a thick lax cellular tiſſue; it is lined with a plaited, mucous membrane, on which is found a great number of peculiar ſmall glands. Of theſe glands two are of a larger ſize, and their apertures, *lacunæ*, are ſituated near to the vulva.

Under the mucous membrane of the inferior part of the vaginal conduit, near its entrance, is found a *cavernous body* (plexus retiformis), an inch in breadth, which embraces that part during coition.

ition. This plexus becomes filled with blood during coition, and oppoſes more reſiſtance; it is covered by two muſcles (*conſtrictors*) which deſcend from the ſides of the clitoris, embrace laterally the ſides of the vagina, and are confounded behind with the tranſverſe muſcles and the cutaneous ſphincter. They tend to contract the capacity of that conduit: their action in ſome women is very ſtriking.

399. The uterus is ſituated in the leſſer pelvis, between the rectum and the bladder; it proceeds ſomewhat obliquely to the right, but its poſition varies at the different periods of pregnancy.

This organ is ſomewhat flattened from before backwards, and affects a triangular form; it is covered by the peritonæum, which is reflected before on the bladder, and behind on the rectum, forming ſome ſmall folds: *anterior and poſterior ligaments.*

The uterus is retained on the ſides by a broad fold of the peritonæum, which adheres to the ſides of the pelvis: *the broad ligament.* This fold exhibits before a *round ligament*, which from the ſuperior angle of the uterus deſcends obliquely before and below the uterine tubes: it then aſcends, paſſes through the ring, and diſtributes itſelf in the form of a gooſe's foot in the integuments of the groin.

The neck of the uterus exhibits a ſort of dilatation flattened from before backwards; it is ſurrounded by the bottom of the vaginal conduit, in

the inside of which it forms a projection. The edges of its transverse aperture (*os tincæ*), naturally united, are covered, in women who have had children, with furrows and tubercles.

The cavity of the neck of the matrix exhibits folds along and across the orifice of some glands, and often small round and glandulous bodies.

The cavity of the body of the matrix is of a triangular form: the sides of this organ, which are habitually contiguous, exhibit the apertures of the uterine sinuses, and those of some glands: at the lateral angles of this cavity are found the two very narrow orifices of the uterine tubes.

The sides of the uterus are exceedingly thick, and of a compact, contractile tissue: the thickness of this organ is increased during pregnancy, and the venous sinuses become then very apparent.

The uterus is lined with a mucous membrane, which is continued with that of the vagina.

The uterine tubes form two tortuous canals in the anterior folds of the broad ligament: they are exceedingly narrow towards the uterus, become wide in proportion as they recede from it, and terminate in a broad fringed aperture which floats in the abdomen, and adheres to the ovarium by one of its fringes.

The tubes are of a very compact tissue, and are lined with a mucous membrane. The cavity of them

them affords a poſſibility of penetrating into the abdomen without injuring the parts.

400. The ovaria, which are of an oval form, are ſituated behind the tubes, in the poſterior fold of the broad ligament. They are of a cloſe, compact tiſſue, which gives them a glandulous appearance, and near their ſurface they contain veſicles of different ſizes, in which is found an albuminous fluid.

The ovaria are enveloped by a peculiar tunic, covered by a duplicature of the peritonæum; they are fixed to a portion of the broad aperture of the uterine tube.

At the moment of fecundation the cavity of the tube is applied to the ovarium; one of the veſicles of that organ ſwells up and burſts, and there iſſues from it an albuminous ſubſtance, which enters the tube and deſcends ſlowly into the uterus: this is the embryo with its coverings and placenta.

401. The placenta, which is flat and of a circular form, exhibits a vaſcular and parenchymatous tiſſue of a flabby conſiſtence: one of its ſurfaces adheres to the matrix by means of a looſe cellular tiſſue.

The ſurface of the placenta, which correſponds to the uterus, is unequal, and interſperſed with tubercles and anfractuoſities: theſe anfractuoſities

can correſpond with the uterine ſinuſes, ſo as to form cavities common to theſe two organs, from which the placenta receives the blood it furniſhes to the fœtus.

The free ſide of the placenta is covered by the chorion; it exhibits a plexus of arterial and venous veſſels, which proceeds to the child in the form of a cord.

The fœtus is enveloped in a double membrane: the firſt, called the *chorion*, is applied to one ſide of the placenta; its exterior ſurface is covered by a ſort of down, and its interior adheres to the *amnios* by a looſe cellular tiſſue.

The amnios, thin and tranſparent, contains the liquor in which the fœtus is immerſed; this membrane with the preceding forms a prolongation which envelops the umbilical veſſels.

The liquor of the amnios contains albumen and ſoda, muriate of ſoda, phoſphate of lime, an alkaline matter, and perhaps a little acid: theſe ſubſtances conſtitute eleven or twelve hundredth parts of this liquor.

The ſebaciform matter, which is ſometimes depoſited in very large quantity on the fœtus, appears to be a mixture of animal mucilage and fat matter; it has an analogy with animal ſubſtances *converted into fat* *.

* See Buniva and Vauquelin, *Journal de Phyſique, Vendem. an ix.*

The

The cord is formed by a vein and two arteries, united by means of a viſcous cellular tiſſue, and by a ligament produced by the *urachus*.

The vein which brings the blood from the placenta proceeds to the liver, where it ſeparates into two branches, one of which loſes itſelf in that organ, and the other proceeds into the vena cava.

The umbilical arteries are the two principal branches of the pelvi-crural; they bring back the blood from the fœtus to the placenta.

After the fœtus has acquired a certain expanſion, and when the placenta has attained to a ſort of maturity, the uterus contracts, and expels the whole. At that period the child ſtill remains attached to the mother by the need it has of lactation.

402. In the female the breaſts are formed of a gland divided into ſeveral lobes, and enveloped by a fat ſubſtance, more or leſs firm and abundant. They begin to be expanded a little before the period of menſtruation. This period varies in different climates; but, in general, it takes place ſooner in warm than in cold climates; in large cities than in the country. The development of the breaſts ſeems to be determined by the action of the uterus.

The breaſts ſwell up or become prominent in the time of pregnancy, during menſtruation, and during all affections of the uterus.

Their ſize is ſubject to great variation in different individuals, and even in different climates: in old age they become flaccid and hang more down, according as they have been more voluminous, according as the individual grows thinner, and as they have been longer uſed for lactation, &c.

The mammillary glands give birth to a great number of excretory veſſels, which unite into about fifteen exceedingly flexuous canals, which open at different points of the nipple.

The nipple, which projects more or leſs, is of a roſe-colour in young females, and in women who have had children generally aſſumes a browniſh tint. It is ſurrounded by an areola of the ſame colour, on which are found glandulous follicles, that ſecrete an unctuous humour.

403. The milk is compoſed of three principal ſubſtances: the butyraceous matter, the caſeous matter, and the ſerum. Milk contains alſo muriates of potaſh and of ſoda; phoſphates of potaſh and of ſoda; but theſe ſalts being in ſmall quantity and variable, are not eſſential to the formation of that liquor.

To analyſe milk, expoſe it to the air for one, two, or three days, according to the degree of the temperature of the atmoſphere: the cream, which ariſes on its ſurface, muſt be removed by means of a ſpoon; and below it will be found the caſeous

part, floating in the whey or ſerum: theſe two ſubſtances are to be ſeparated by filtration.

The ſerum conſiſts of water, holding in ſolution ſugar, an acid *(the lactic)*, a little calcareous matter, and the different ſalts which, as already ſaid, exiſt in milk. The caſeous part depoſits itſelf by evaporation, and the ſugar of milk cryſtallizes: this ſugar may be purified by a ſecond and third cryſtallization.

The cream when oxygenated forms butter. The caſeous matter, when fermented, forms cheeſe: during this fermentation there is produced a large quantity of ammonia, which is diſengaged, and which becomes inſupportable when cheeſe is put into an alkali. It is probable that there is formed alſo, during this fermentation, an acid which fixes the ammonia as it is produced, and there is reaſon to think that this acid is the acetous, or that of vinegar.

GENERAL DISPOSITION OF THE ANATOMICAL STRUCTURE.

404. The ſtructure of the different ſyſtems of organs in man is not eſſentially different from the ſtructure of thoſe of animals, and eſpecially of thoſe which compoſe the claſs of the mammalia.

The bones, the muſcles, the veſſels, the nerves, the organs of ſecretion, and thoſe of the different ſenſes, ſeem to be exactly the ſame, a few differences in regard to form, ſize and poſition excepted.

All theſe organs, in the laſt reſult, ſeem to be merely a tiſſue of veſſels and nerves differently arranged, in the interſtices of which are depoſited albuminous, gelatinous, adipoſe, ſaline, &c. ſubſtances, which give them ſolidity, and form the parenchyma.

Theſe different tiſſues, though their intimate ſtructure be unknown, form ſeveral anatomical ſyſtems of organs, which ought to be carefully diſtinguiſhed, becauſe they exhibit analogous functions and diſeaſes.

Theſe different anatomical ſyſtems of organs are in particular: the bones, the muſcles, the veſſels, the nerves, the fibrous, the mucous, and the

ſerous

ſerous membranes, the glandular organs, the cellular tiſſue, and the ſkin.

The bones are formed of a tiſſue of veſſels, in which are ſecreted and depoſited the phoſphate and carbonate of lime, that give them ſolidity. The life of the bones is maintained by the circulation eſtabliſhed between the veſſels of the perioſteum, thoſe of the bodies of the bones, and thoſe of the medullary tiſſue.

The muſcles are compoſed of bundles of fibres: each fibre ſeems to be formed of ſeveral other ſmaller fibres, ſeparated and enveloped by cellular tiſſue; and this ſub-diviſion of the fibres into ſmaller ones, alſo ſeparated and enveloped by cellular tiſſue, is indefinitely continued. The arrangement of the muſcles in long contractile fibres renders them very proper for performing great motions.

The arteries, compoſed of a thick and compact tiſſue, diſtribute the blood to every part of the body. They are divided and ſub-divided indefinitely; and our eyes, aided by the beſt inſtruments, are incapable of following them ſo far as to be able to diſcover in what manner they terminate in the different organs.

The veins and the lymphatic veſſels are of a looſer tiſſue, and their ſides are not ſo thick. It is as difficult to diſcover the origin of theſe veſſels as to obſerve the termination of the arteries.

The

The nerves are whitiſh cords formed of fibres in bundles; each fibre is compoſed of a ſoft pulpy part, enveloped by a membranous ſheath. The ſoft and pulpy part of the nerve ariſes immediately from the ſubſtance of the cerebrum, of which it ſeems to be a continuation: it is covered from its origin with the membranous ſheath or vagina, and never quits it but at the termination of the nerve in the organ where it expands.

The fibrous membranes of a white and compact tiſſue form a covering around the bones: they compoſe the ligaments and articular capſules, the tendinous and the aponeurotic part of the muſcles, and are obſerved alſo around ſome other parts.

The mucous membranes are thoſe which line the pneumo-gaſtric and the genito-urinary paſſages; the ſurface of them is covered with glandulous follicles which give it a velvety appearance. Theſe membranes ſecrete a humour always viſcid, the nature of which, however, is different in the different parts.

The ſerous membranes compoſe the exterior part of moſt of the organs, the interior part of which conſiſts of mucous membranes; and, in general, they cover all the ſurfaces of parts which are only contiguous and ſubject to reciprocal friction; ſuch as the inſide of the articular capſules, of the tendinous vaginæ, of the pleura, &c. They continually ſecrete a ſerous matter, by which theſe ſurfaces are lubricated.

The

The glandular organs comprehend, 1ſt, the lymphatic glands deſtined for aſſimilating the ſerous liquids before they are mixed with the blood; 2d, the viſcera ſet apart for ſome particular ſecretions, ſuch as the kidneys, the liver, &c. The organic ſtructure of theſe various parts is different.

The cellular tiſſue, of a looſe nature, is diſtributed around all the organs, and ſerves to unite them; it ſecretes and retains in its areolæ that adipoſe ſubſtance which conſtitutes fatneſs.

The ſkin is compoſed of a vaſcular, thick, and whitiſh ſubſtance, which forms the *dermis*, or ſkin properly ſo called; it is lined by the mucous body which gives the ſkin its colour, and the whole is covered by imbricated laminæ, dry, and in ſome meaſure inorganized, which form the *epidermis*. The ſkin contains alſo in its ſubſtance ſmall glands, and the bulbs of the hair.

405. All theſe ſyſtems of organs diſcharge their particular functions by the influence of the nerves which are diſtributed to them. The nerves they receive may come from the encephalon, the vertebral prolongation, or from the ganglions of the tri-ſplanchnic, and thus give them different modes of ſenſibility.

The ſyſtems of the functions exhibit phænomena varied in proportion to the greater or leſs number of the anatomical ſyſtems of organs which enter

into their compoſition, and which each carry thither, as we may ſay, a particular kind of life. Thus, in the ſyſtem of viſion, when the action of the optic nerve ceaſes, the eye no longer perceives the impreſſion of the rays of light, yet it continues to live and to move: if the muſcles of that organ become palſied, the eye neither ſees, nor is capable of motion. In the laſt place, if the action of the nerves of its vaſcular tiſſue is gradually diminiſhed, the organ is abandoned to the laws of affinity, and falls into a ſtate of putrefaction.

It muſt here be obſerved, that independently of the compound action of the different ſyſtems, there are effected, in every point of the organization, a continual ſecretion and abſorption, for which the nerves convey the principle of action, and the arteries the materials of nutrition.

END OF THE FIRST PART.

PART

PART SECOND.

HISTORY OF DISEASES.

HISTORY

OF

DISEASES.

1. HEALTH is the eſſential reſult of regularity in the cerebral and nervous action, which cauſes each organ to perform the function aſſigned to it.

This nervous action is itſelf maintained by the reſult of the functions which it cauſes to be executed; ſo that the nervous action and the functions of the various organs have a mutual dependence on each other.

The whole of the organization is compoſed of ſecretory organs, organs of motion, organs of the ſenſes, and the intellectual organ.

In diſeaſes, the *action* of theſe ſyſtems of organs, and the *reſults* of this action, may be increaſed, diminiſhed, deranged, ſuſpended, or deſtroyed, with or without any ſenſible alteration in the ſtructure of the parts. All diſeaſes, indeed, are only combinations of theſe different modes of derangement, with a ſlower or more rapid progreſs.

This general view may ſerve to convey ſome idea of the difficulties which occur in claſſing methodically all theſe diſorders, the numerous combinations of which are indefinitely varied.

If it be very difficult to arrange, in a ſatisfactory manner, the functions of the organs and the phænomena reſulting from the natural order of their action;

action; to claſs all the derangements of them muſt be attended with ſtill greater difficulty.

Each ſyſtem of organs has only one general mode of action for performing, in a regular manner, the functions peculiar to it; and this mode of action may be deranged in a thouſand different ways.

From theſe few obſervations on the number and nature of the organic derangements poſſible to exiſt, it may be readily conceived that the ſimpleſt and moſt general claſſification of them muſt be that which is attended with the feweſt inconveniences: they may indeed be comprehended under a ſmall number of principal heads.

2. When a point of the organization is irritated by any ſtimulating cauſe, whether external or internal, the ſtate of the affected part experiences a change, the reſult of which may be an alteration in its organic texture.

All alterations of this nature conſtitute the PHLEGMASIÆ.

There is an eſſential difference between the various kinds of Phlegmaſia, 1ſt, in regard to the ſyſtem of the organs where they take place; 2d, in regard to their rapid or ſlow progreſs (acute or chronic); 3d, according to the conſtitution of the patient, the ſtate of the atmoſphere, &c.

We ſhall here give a hiſtory of the Phlegmaſiæ, and conſider them under all theſe different points of view.

PHLEG-

PHLEGMASIÆ.

PHLEGMASIÆ OF THE CELLULAR AND PARENCHYMATOUS TISSUES.

3. When any irritant whatever (the *aiguillon* of Vicq d'Azyr, the *ſpina* of Van-Helmont) acts on the cellular tiſſue of the ſkin, a painful ſenſation, which gradually increaſes, with heat, intumeſcence, redneſs, tenſion, renitent hardneſs, a greater or leſs ſenſibility to the touch, ſoon manifeſts itſelf in the part. At times, after a ſlight or even a violent coldneſs, the following ſymptoms take place: a general heat, exceſſive thirſt, pain in the head, full, ſtrong, accelerated pulſe, watchfulneſs, &c. which all together conſtitute *febrile excitement*. The intenſity of theſe ſymptoms, in general, is in the ratio of the irritation occaſioned in the part, and of the local or univerſal ſenſibility.

After a firſt period of from four to ſix days, in the courſe of which the ſymptoms gradually increaſe, it may happen that they will abate by degrees and completely diſappear. During this mode of termination *(reſolution)*, different excretions, more abundant, ſuch as liquid bilious ſtools,

ſweats, ſedimentous urine, &c. are ſometimes obſerved.

Sometimes the ſymptoms proceed to the ſame degree, or even make a further progreſs, with accelerated and very painful pulſation, a burning heat, &c. The tumour increaſes, is more circumſcribed, becomes ſoft, and exhibits a ſummit more or leſs prominent, in the centre of which a collection of fluctuating liquid can be perceived by the touch. A diminution of the ſymptoms then takes place, accompanied with a ſenſation of heavineſs and of painful tenſion. At times a ſhivering comes on; and at length, in conſequence of a ſpontaneous or artificial opening of the part, a whitiſh opake and moderately thick liquid *(pus)* iſſues from it, and the pain almoſt immediately ceaſes.

At other times the ſymptoms as yet exhibit no indication of abatement; the part is of a bright red or purple colour; hard, diſtended, ſhining, and exceedingly painful when touched. Soon after, a livid or browniſh tint, and veſicles filled with a yellow, reddiſh, and ſometimes black ſeroſity, are obſerved towards the centre of the tumour; the pain then decreaſes, the tumour ſubſides, and its wrinkled ſurface forms a black hard cruſt, full of cracks, and of greater or leſs thickneſs. At other times it becomes ſoft, exhibits a leaden colour, and aſſumes the conſiſtence of paſte. If theſe appearances *(gangrene)* continue, the parts ſucceſſively

ſucceſſively corrupt; the pulſe becomes low and weak; the features of the countenance are altered; the limbs grow cold, and the patient ſoon dies. But, for the moſt part, the ſymptoms of phlegmon continue and increaſe; ſuppuration takes place in the part contiguous to that which is gangrened; and the latter, after a ſort of putrefaction, modified by a remainder of vital action, gradually detaches itſelf, and at length is completely ſeparated.

Such are the different terminations of PHLEGMON.

4. When a ſolution relates only to the ſkin, the cellular membrane, and even the muſcular parts, it produces ſymptoms which approach near to thoſe of phlegmon: ſwelling, redneſs, and heat, with pain and tenſion, indeed, take place, gradually increaſing. If the lips of the ſolution are in contact and at reſt, adheſion is eſtabliſhed between them; a *re-union* is effected, and all the phlegmonous ſymptoms abate, and diſappear in a few days. But, if the wound be left to itſelf, if the edges of it cannot be brought together, or kept in contact; in a word, if the irritation is very great, and its phlegmonous effect widely extended, a whitiſh liquid is ſeen to ooze forth, which gradually thickens, becomes opake, and towards the ſixth or ſeventh day aſſumes all the characters of pus. The phlegmonous ſymptoms then decreaſe, and concentrate

themſelves in the injured parts; the purulent excretion progreſſively abates; the ſwelling ſubſides; the extent of the wound becomes leſs, and its ſurface is covered with pimples of a bright red colour: theſe pimples ſink down, and exhibit, towards the edge of the wound, a thin pellicle or ſort of epidermis, which unites itſelf to that of the ſkin. *Simple wounds.*

5. When the wound relates to a white fibrous organ, ſuch as an aponeuroſis, a tendon, ligaments, articular membranes, &c. the ſymptoms may aſſume a much greater degree of violence.

Though theſe parts, in general, are endowed only with a ſlight degree of irritability, wounds in them are ſeen to unite in thirty-ſix or forty-eight hours, like the ſimpleſt ſolution of the ſkin. But the re-union often does not ſucceed, either through a deficiency of phlegmonous orgaſm, or becauſe the lips of the wound have not been properly brought together. The ſolution then remains open, without any very ſenſible pain, ſwelling, or redneſs; a ſerous matter iſſues from it, and ſlowly aſſumes opacity, whiteneſs, and all the characters of pus: at length, about the fifteenth day nearly, its ſurface, covered with a bright red granulation, quietly cicatrizes from the twentieth to the thirtieth day: this is often ſeen to take place in wounds near the articulations.

But under other circumſtances, which depend no

no doubt on the extent and the depth of the wound, the kind of inſtrument with which it has been made, and particularly the ſtate of the irritability of the individual, the phænomena aſſume a quite different progreſs. After a ſeries of ſymptoms, more or leſs violent, during the firſt ſeven days, ſuppuration, when once fully eſtabliſhed, is followed by a period of calmneſs or ſtagnation, and towards the ninth or the tenth day the phlegmonous ſymptoms recur with more violence; the ſwelling often extends throughout the whole length of the limb; a high fever comes on, particularly towards the evening, with watchfulneſs, loſs of appetite, thirſt, and various derangements of the head, breaſt, &c. Pus ſeems to iſſue from all the parts adjacent to the wound, and to form itſelf into collections. The acute ſymptoms are not ſeen to decreaſe till between the fourteenth and twentieth days, at which time abſceſſes are formed in different parts. The limb, at firſt painful and diſtended, becomes flaccid, ſoft like paſte, and almoſt entirely indolent, &c. The various apertures, then continuing to throw out pus, are gradually covered with a granulated ſurface of a vermilion red colour, and inſenſibly proceed towards cicatriſation; the ſoft ſwelling decreaſes, and the limb gradually returns to its natural ſtate.

During the courſe of theſe phænomena, if the white fibrous parts are uncovered, their ſurface is ſeen to aſſume a dull colour, more or leſs livid,

and to detach itſelf in dry films. Theſe white parts then exhibit pimples of a vermilion red colour, which are confounded with thoſe of the reſt of the wound. *Wounds of the white fibrous organs.*

6. When a part loſes its organic texture by the application of a chemical agent, or the ſudden ſhock of a body which moves with great velocity, a phlegmonous action is produced around the wound, and is followed by ſwelling, redneſs, heat, pulſation, very acute ſenſibility, and at length ſuppuration. The parts bruiſed or lacerated by the contuſion, or otherwiſe altered, according to the nature of the body or cauſtic applied, become dead, and detach themſelves, exhibiting all the phænomena of gangrene. *Wounds from contuſion.*

7. In all the caſes here mentioned, when the ſecretion of pus has been fully eſtabliſhed, and excretion freely takes place, the pain, ſwelling, heat and redneſs decreaſe; the phlegmonous action concentrates itſelf at the ſurface of the wound, which gradually cloſes, and becomes covered with granulations of a bright and vermilion red colour.

The ſuppuration alſo gradually decreaſes; the pimples ſubſide, become covered with a thin epidermoidal pellicle, which proceeds from the circumference towards the centre of the wound, aſſuming all the characters of the ſkin, but leaving

ing a mark which always indicates the place of the ſcar.

8. Phlegmon may be determined by a great number of circumſtances, ſuch as pricking, wounds, contuſion, burning, irritating applications, violent friction, and by a certain ſtate in the general and individual conſtitution. Abſceſſes are ſometimes formed in different parts, towards the end of ſeveral diſeaſes. The development of a phlegmon is often ſeen to coincide with the ceſſation of ſome derangement in parts more or leſs diſtant; as highly varied affections are obſerved to manifeſt themſelves at the period when the progreſs of a phlegmon ceaſes.

Phlegmon exhibits alſo a very great number of varieties, which depend on the ſtrength of the irritation exerciſed on the part, and the ſtate of the local or individual irritation. In ſome perſons very ſlight wounds are attended with the worſt conſequences; while, in others, wounds which in appearance are exceedingly ſevere occaſion only very ſlight ſymptoms.

The pus, with the nature of which we are not yet thoroughly acquainted, and which appears to approach very near to gelatin, exhibits alſo highly varied ſhades in its colour, its conſiſtence, and its characters. The periods of the phlegmon are not always attended with that regularity indicated in

the deſcription: purulent collections ſeem often to be formed inſtantaneouſly; ſometimes gangrenous marcidity is the firſt external ſymptom that appears: it then depends on a particular ſtate of univerſal or local adynamia, which may ſpeedily produce death.

9. *Phlegmon of the lungs.* At the commencement of a ſomewhat cold ſpring, in autumn, and particularly during a dry cold winter, ſome robuſt men, and perſons in general who are not inured by habit to the ſeverities of the weather, may be ſuddenly attacked by an acute diſeaſe, after violent exerciſe, and particularly of the organ of reſpiration, by the ſudden impreſſion of very intenſe cold on a part of the ſkin, and eſpecially on the bronchiæ.

This diſeaſe anounces itſelf by violent ſhivering, of longer or ſhorter duration. This ſymptom is immediately followed by burning heat, violent oppreſſion and a ſenſation of tenſion in the breaſt, with a dull and heavy or acute and pungent pain, reſpiration laboured and ſhort, ſcorching breath, and a greater or leſs degree of cough, which is at firſt dry; a ſtrong and high pulſe, ſometimes irregular; and then weakneſs, anxiety, and heat around the hypochondria. Sometimes the powers, merely oppreſſed, are relieved by bleeding; but at others the weakneſs and oppreſſion are exceſſive, and the anxiety inexpreſſible; reſpiration is exceedingly ſhort;

ſhort; the thorax, forcibly elevated, remains motionleſs, ſo that the abdomen alone performs the motions of reſpiration. The patient turned on his back with his head low, ſometimes makes vain efforts to riſe, and again falls down. At other times he cannot remain in a recumbent poſture, but keeps himſelf almoſt in a vertical poſition, his ſhoulders elevated, his arms ſpread out, and his mouth and noſtrils wide open: the pulſe is then tremulous, and almoſt imperceptible; the limbs are cold, with partial ſweats; the eyes are ſparkling and fixed; the viſage is puffed up, red, and almoſt livid. The patient loſes all recollection, becomes inſenſible, and dies ſuffocated.

On opening the body, the two lobes of the lungs are found diſtended with blood, and hard as if carnified; at other times only one lobe or one of its parts appears to be in this ſtate; but in that caſe its enlarged volume raiſes up the ſides of the thorax, propels the mediaſtinum towards the oppoſite ſide, and impedes the action of the ſound lobe. This is what Hippocrates calls the lungs falling to one ſide.

In other caſes, where the diſeaſe is much milder, or when its progreſs has been moderated or ſuſpended by timely bleeding, an inſenſible reſolution takes place between the fourth and the fifth day.

At other times, between the fourth and the fifth day there is an eaſy and abundant expectoration

tion of a mucous matter, at firſt dilute, and uniformly tinged or merely ſtriated with blood, which afterwards gradually becomes thick, and aſſumes a yellowiſh white colour: it is not a very favourable ſymptom when it appears only after the ſeventh day. At the ſame time the pain becomes acute, the cough leſs oppreſſive, reſpiration eaſier, and the pulſe fuller. The patient can move with more facility, and begins to lie on both ſides. At this period, it is often obſerved that the urine becomes turbid as well as abundant, and depoſits a yellow or reddiſh ſediment: a naſal or hæmorrhoidal hæmorrhage comes on; the ſtools are yellow, firſt liquid, and then of greater conſiſtency. Sometimes phlegmons manifeſt themſelves, or œdematous ſwelling, towards the thighs or legs, abſceſſes about the ears, &c.

All theſe external phænomena are favourable ſymptoms, when they take place before the ninth day, and go properly through their periods.

The diſeaſe, however, may continue a certain time without any ſign of reſolution; the ſymptoms, inſtead of gradually decreaſing, maintain themſelves in the ſame ſtate, or even increaſe, accompanied with continued delirium, a weak and undulating pulſe: the pain at length ceaſes, the febrile ſymptoms abate; the face, at firſt red and puffed up, returns to its natural ſize, and becomes pale, with a dark redneſs on one or both cheeks.

The

The patient is ſubject to ſlight, frequent, and irregular fits of ſhivering; has a ſhort cough, without expectoration; experiences heat towards evening and during the night, with ſweats around the neck and towards the forehead; his pulſe is faint, weak, and quick; reſpiration is difficult, ſhort, and ſometimes attended with noiſe; the patient cannot lie on the ſound ſide; his urine becomes ſpumous; the viſage grows paler and paler; the whole body is extenuated; the weakneſs daily increaſes, and ſuppuration is then certain.

In this caſe, if the diſeaſed part occupies a large ſpace, ſo as to oppoſe the action of the ſound part of the lungs, or if the abſceſs breaks in the bronchiæ, ſo as to inundate them ſuddenly with a large quantity of pus, the patient may be ſuffocated. However, if the pus be gradually evacuated by expectoration, there is ſome hope; but the indeterminate duration of the ulcer, conſumption, and death, remain to be apprehended.

Sometimes the purulent collection is diſcharged into one of the cavities of the thorax. In this caſe the patient ſuffers a great deal when recumbent, and particularly on the ſound ſide; in general he ſits in bed, inclining a little forwards; a depreſſion of the ſhoulder on the diſeaſed ſide is obſerved, and a curvature of the ſpine: the latter cauſes an enlargement of the cavity filled with pus on the oppoſite ſide, which when ſtruck emits a hollow ſound;

found; reſpiration becomes difficult, is performed with very little motion in the whole of the diſeaſed ſide, and a ſtriking difference is obſerved in the pulſe of the two ſides. In this ſtate, the operation of empyema is almoſt always uſeleſs, and the patient falls a ſacrifice to the diſeaſe.

Nothing very certain has been obſerved in regard to the period at which a want of reſolution produces an unavoidable ſuppuration. Hippocrates depends on ſuppuration after the fourteenth day. Stoll found the lungs in a ſtate of phlegmonous turgeſcence, and ſtill without ſuppuration, on the twentieth day: bleeding had been amply repeated; he found the ſame ſtate on the ninth day in a patient who had received no aſſiſtance. The degree of ſenſibility peculiar to the individual, the means of cure employed, &c. may occaſion great variety in the progreſs of the diſeaſe.

After a very violent commencement and a rapid progreſs, if the pain and oppreſſion ſuddenly ceaſe, and if there come on at the ſame time extreme debility, weakneſs of the pulſe, coldneſs of the limbs, and about twelve hours after an expectoration of ichorous, black, livid, and highly fetid matter, the patient will fall a ſacrifice to gangrene.

Such are the general progreſs and the different modes of termination exhibited by phlegmon of the lungs: *Pneumonia.*

This affection of the proper tiſſue of the lungs is rarely

rarely found alone, being for the moſt part accompanied by that of the *pleura*, and that of the *bronchiæ*, the characters of which we ſhall explain hereafter.

11. *Phlegmon of the liver* is much leſs common than that of the lungs: it commences, in general, by a ſhivering more or leſs evident, and of greater or ſhorter duration, followed by an univerſal heat: the pulſe is quick, weak and hard; the patient has an ardent thirſt, &c. a painful tenſion; and ſometimes a ſtriking elevation of the right hypochondrium, or even of the epigaſtric region, is obſerved, with a ſenſation of heavineſs, or a pain ſometimes dull and at others acute and pungent. The patient cannot bear the application of the hand to that region; he finds himſelf better when recumbent on the back, or on the right ſide than when on the left; inſpiration is exceedingly painful, and is performed almoſt entirely by the motion of the thorax.

In certain caſes, reſpiration is exceedingly confined and interrupted; the pleuritic pain extends as far as the clavicle, and is increaſed by every movement of the breaſt. The patient has a dry cough, which is ſometimes accompanied with a ſlight expectoration tinged with blood; hiccup, delirium, &c. enſue. As the phlegmonous orgaſm approaches very near to the ſurface of the diaphragm,

diaphragm, the diſeaſe may be ſometimes taken for a pleuriſy or pneumonia.

At other times the patient experiences nauſea, with a pinching in the œſophagian part of the ſtomach; throws up his food or drink, and then a bilious matter. Sometimes he complains only of tenſion and uneaſineſs towards the epigaſtric region: the ſeat of the phlegmon approaches the abdominal ſurface. Yellowneſs of the eyes and of the ſkin are far from being conſtant ſymptoms.

The diſeaſe may terminate in a few days by a ſimple and inſenſible *reſolution*, or *critical* movements announced before the fourth day by bilious ſtools ſometimes tinged with blood; an ample evacuation of thick red urine, which depoſits a whitiſh ſediment; a ſtrong hæmorrhagy of the noſe, and particularly from the right noſtril; a hæmorrhoidal flux, gentle and univerſal ſweats, a ſlight ſenſation of pain in the ſpleen.

A phlegmonous tumefaction of the liver ſeldom reſolves itſelf completely; it almoſt always leaves nuclei or tubercles, formed no doubt by concretions of albumen effuſed in the tiſſue of the organ. They are frequently met with by anatomiſts at the ſurface and in different parts of this viſcus; ſometimes the whole affected part remains in a ſtate of hardneſs and tumefaction, which often determines a ſenſation of heavineſs and oppreſſion, with habitual vomiting; the hypochondrium

chondrium is elevated, hard and diſtended; jaundice frequently takes place, with bloody ſtools, vomiting, hæmorrhois, flabby ſwellings in the legs, and the diſeaſe often terminates by a mortal conſumption. Different concomitant phænomena are commonly obſerved in a great many of the other viſcera, and particularly in the ſpleen.

If the covering which envelops the liver be in particular affected, there frequently takes place at its ſurface a lymphatic exudation; and the reſult is membraniform concretions, which cover and ſometimes unite together the liver, the inteſtines, the meſentery, and the peritonæum.

But if the diſeaſe continues a certain time with uniform or even increaſing intenſity, without any ſign of reſolution, and without favourable excretion at a certain period, the pain becomes more acute with repeated throbs; the ſhooting then decreaſes, and nothing remains but a ſenſation of heavineſs; irregular fits of ſhivering come on, with ſlight attacks of fever, an ardent thirſt, partial and wandering ſweats: in this caſe ſuppuration has already taken place; the matter is diſcharged ſometimes into the abdomen, and forms a purulent aſcites, for the moſt part ſanious: at other times it is poured into the duodenum through the biliary pores, and is evacuated by vomiting and by ſtools. In general, a purulent diarrhœa remains; the ſtrength becomes gradually exhauſted, and conſumption at length

length brings on death. The matter is ſometimes conveyed through the diaphragm as far as the lungs, and is evacuated by the bronchiæ or diſcharged into the thorax. At other times a direct communication is found between the ſeat of the purulent diſcharge and the ſtomach. In certain caſes the liver has been found converted almoſt entirely into pus, and forming a large vomica. In the laſt place, if the abſceſs directs itſelf outwards, a flabby ſwelling, ſometimes painful to the touch, and exhibiting afterwards a manifeſt fluctuation, is obſerved under the integuments. The abſceſs opens; and if the pus be white, inodorous, and of a uniform conſiſtence and colour, ſome hope remains; but if it be ſanious, browniſh, and fetid, a cure is always very uncertain.

Phlegmaſia of the liver may leave immediately after it a ſtate of conſtriction in the ductus choledochus, or an inſpiſſation of its tunics; and the bile ſecreted after the liver returns to its natural ſtate is accumulated in the gall-bladder. The latter, gradually extended, exhibits externally a fluctuating tumour, which may be readily taken for an abſceſs. But, in this caſe, the pain is not throbbing, the ſhiverings are of ſhort duration; there are no ſlight ſweats, no flabby ſwelling of the integuments; the tumour is always below the ribs, behind the right pubio-ſternian muſcle; it is perfectly circumſcribed, with fluctuation, in every

part of its extent, and without any hardneſs or ſwelling towards its circumference. If the point of its adheſion with the parietes of the abdomen be diſcovered, a puncture may be made in that part; but the aperture almoſt always remains fiſtulous.

At the commencement of the diſeaſe, an eryſipelatous affection has ſometimes been obſerved in the right hypochondrium, with an impoſſibility of enduring the ſlighteſt touch. Theſe ſymptoms are ſoon followed by heat, proſtration of ſtrength, anxiety, great agitation, vomiting; reddiſh ſtools, black, and exceedingly fetid; continual hiccup, cold ſweat in large drops, coldneſs of the limbs, and thirſt; the pulſe is exceedingly weak; the patient experiences frequent ſhivering, with ſudden paleneſs; the cheeks fall in, the eyes ſeem ſunk, the noſe projects, &c. and death ſoon enſues.

Phlegmaſiæ of the liver ſeem to be more painful when they affect at the ſame time the membrane by which that organ is covered. Very conſiderable abſceſſes are frequently obſerved in the ſubſtance of the liver, while no ſymptom gives reaſon to ſuſpect their exiſtence. Theſe ſecret phlegmaſiæ coincide, for the moſt part, with ſome affection of very diſtant parts, and particularly of the head. It is well known that abſceſſes, which are not announced by any appearance of a phlegmonous nature, manifeſt themſelves externally, and

eſpecially towards the end of ſome fevers or febrile diſeaſes. *Hepatitis.*

12. The liver becomes the ſeat of chronic phlegmaſiæ as well as the lungs. It is not uncommon to find the liver exceedingly voluminous, hard, and interſperſed with tubercles, either at the ſurface or at a conſiderable depth, exhibiting internally a whitiſh colour, or ſmall purulent collections, and ulcers full of a ſanious liquid, &c.; adheſion to the parietes of the abdomen and other viſcera, &c. without any ſigns of acute phlegmaſia, but only ſometimes ſlight wandering pains, repeated jaundice, &c. Theſe diſeaſes are not yet known but by anatomical reſearches.

Hepatitis may be determined by a ſevere contuſion on the region of the liver, overſtrained running, the uſe of cold liquors after too great exerciſe, exceſſive ſorrow, violent tranſports of paſſion, a contuſion or wound in diſtant parts, as the hand, leg, and particularly the head, &c. This diſeaſe coincides ſometimes with a ſuppreſſion of the menſes, or an habitual hæmorrhoidal flux.

Chronic hepatitis may be the reſult of the ſame cauſes, acting with leſs energy but more frequently, ſuch as long continued grief, frequent tranſports of paſſion, abuſe of ſtrong ſpiritous liquors, premature uſe of cinchona in intermittent fevers, &c.

13. *Phlegmon of the kidneys.* Medical obſervers, and

and in particular Morgagni, mention a number of facts which ſhow the aptitude of the kidneys for phlegmonous affection. The patient towards the lumbar region experiences a burning, acute pain, fixed and conſtant, which is propagated ſometimes along the ureter, as far as the groin, with a numbneſs of the thigh, and retraction of the teſticle. The malady begins with a ſhivering, followed by univerſal heat, acceleration of the pulſe, thirſt, anxiety, nauſea, vomiting, and even a painful conſtriction towards the epigaſtric region. The urine comes off in ſmall quantity, and is exceedingly red and burning, with a frequent deſire of voiding it.

Theſe ſymptoms ſometimes diſappear in the courſe of a few days, and a favourable termination may always with certainty be expected when an abundant hæmorrhoidal flux comes on at the commencement; when an ample diſcharge of red, thick, and ſedimentous urine is eſtabliſhed, before the ſeventh or at leaſt the fourteenth day, and continues for ſeveral days.

But if the diſeaſe maintains itſelf, or goes on increaſing, ſuppuration is commonly announced after the ſeventh day by a painful ſenſe of pulſation. The latter at length ceaſes, and is followed by irregular ſhivering, with torpor and heavineſs in the part; the urine becomes fetid and thick, and depoſits a purulent matter. Sometimes the whole of the kidney is converted into

pus, which is evacuated by the excretory ducts of the urine; and the result is a renal phthisis, generally of long duration. After death, nothing is found in place of the kidney but a membranous bag. At other times the abscess manifests itself under the skin, and opens externally; in which case there almost always remains an incurable fistula. It seldom happens that the pus is evacuated by the colon.

A voluminous induration of the kidney commonly determines a palsy, more or less striking, of the corresponding abdominal limb. This affection of the kidney may sometimes give rise to a slow consumption, dropsy, &c. *Nephritis.*

If with the common signs of nephritis the urine becomes livid, black, and full of brown flakes, &c. gangrene will ensue, and produce death.

Nephritis, in general, depends on the same circumstances as all the kinds of phlegmon: a severe blow on the region of the kidneys, a violent effort either in running or riding, the abuse of strong diuretics, cantharides, &c. but it is often produced by the presence of urinary calculi in the kidneys. In this case it exhibits remarkable peculiarities. A heavy lacerating pain, with intervals of remission, or even complete intermission, is experienced; the return or exacerbation of the pain is determined by the agitation of walking, or riding either in a carriage or on horseback; the urine

urine is generally ſanguinolent, and depoſits a mucous matter, and ſometimes calculous fragments: it is then, in particular, that the pain is propagated along the ureters. This affection, though exceedingly painful, is very often tranſient, and produces no febrile ſymptom, and no ſign of acute phlegmaſia; but in other caſes it aſſumes all the characters of it, and at length brings on ſuppuration.

14. The particular ſigns which announce the mation of a phlegmon in the tiſſue of the ſpleen, and in that of the brain, are not yet known. Theſe phlegmonous affections, for the moſt part chronical, are not obſerved till after death.

15. *General character of phlegmaſiæ of the cellular and parenchymatous tiſſue of the organs.* In whatever part a phlegmon may ariſe, it is always the reſult of an irritation determined in that place. In all caſes there is an afflux of fluids accompanied with ſwelling, pain, and very often an acute and continued fever.

When theſe ſymptoms progreſſively abate, a *reſolution* is effected towards the firſt or ſecond week; but if they continue or are increaſed, with ſhooting pains, wandering and repeated ſhivering, *ſuppuration* is eſtabliſhed. In the laſt place, when the ſymptoms ſuddenly ceaſe, with apparent calm-

neſs, an alteration in the features of the face, a weak and depreſſed pulſe, *gangrene* will ſoon enſue.

In many caſes the phlegmon eſtabliſhes itſelf ſlowly, and as it were in ſilence; the ſymptoms are very tranſient; and yet this *chronic phlegmon* may exhibit the ſame modes of termination as *acute phlegmon*.

The phlegmonous affection may produce alſo a ſtate of *induration*, the further progreſs of which we ſhall deſcribe in another place.

PHLEG-

PHLEGMASIÆ OF THE SEROUS MEMBRANES.

16. Phlegmasia of the *pleura* gives riſe to an acute and generally very ſevere diſeaſe.

Its commencement is announced by ſhivering, ſpontaneous laſſitude, and ſoon after the heat gradually increaſes to ſuch a degree as to become burning; the patient has an ardent thirſt, with a quick pulſe; and all the ſigns of general excitement become very apparent. At the ſame time there ariſes in a ſmall point of one ſide of the breaſt, or in both, a pain which increaſes progreſſively, and becomes very acute; this pain is more violent during inſpiration. Reſpiration, confined, ſhort, and almoſt entirely abdominal, is interrupted and as if ſtopped by the ſenſation of pain. The patient has a frequent and painful cough without expectoration. The pulſe, which is quick, hard, and diſtended like a ſtring in a ſtate of vibration, is often weak and ſoft on the affected ſide, and may therefore lead into an error.

If the diſeaſe be ſlight, it ſometimes terminates ſpeedily by an inſenſible reſolution; at other times its reſolution is announced before the fourth day by a naſal hæmorrhagy, an abundant hæmorrhoidal flux, an ample excretion of thick urine, which

depoſits a white ſediment; yellow bilious ſtools, &c., and a gradual diminution of the ſymptoms. It announces itſelf alſo by the pain being extended towards the ſhoulder, the arm, and the back, with a ſenſation of numbneſs and heavineſs in theſe parts; by the expectoration of a white matter, at firſt thin, then thick and purulent, &c. All theſe ſigns indicate the cure on the ninth or eleventh day.

Sometimes the patient is ſuddenly threatened with ſuffocation; reſpiration is ſhort, accelerated, and highly fatiguing; he is obliged to ſit, inclining a little forwards; the pulſe is weak and exceedingly quick; the limbs become cold; the viſage ſhrinks; and after death there is found, in the cavity of the thorax, a large quantity of tranſparent or opake lymphatic matter, interſperſed with albuminous flakes, almoſt ſimilar to a purulent matter. At other times this matter exudes ſlowly, and the collected liquid, which contains a great deal of albumen, and of which the aqueous part is abſorbed, produces a membrane-like concretion, which unites the pleura to the lungs, and forms around that organ a covering ſometimes an inch in thickneſs.

Stoll is of opinion that theſe concretions become organized in the courſe of time; but this peculiarity has not yet been proved.

The adheſion of the lungs is ſometimes ſlight, and

and does not ſeem to occaſion any inconvenience to the patient. At other times it produces a habitual difficulty of reſpiration, which is increaſed by motion, by a ſtate of plenitude, in almoſt all acute diſeaſes, and it then becomes a diſpoſition eſſential to affections of the breaſt.

In the laſt place, the ſerous liquid diſcharged may be entirely abſorbed; or the quantity of it collected increaſes gradually to ſuch a degree, that the reſult is a hydrothorax.

An affection of the pleura occaſions ſometimes a phlegmon in the pleuro-coſtal cellular tiſſue: in this caſe, the purulent collection may either make a paſſage for itſelf beyond the thorax, or be diſcharged into that cavity; or even penetrate into the interior of the lungs, and eſcape by the bronchiæ.

Sometimes, when the diſeaſe continues with a very great degree of violence, the pain ſuddenly ceaſes, the pulſe becomes feeble, quick, and intermittent; reſpiration is frequent, ſhort, and difficult. Theſe ſymptoms are ſucceeded by a cold ſweat and delirium; the diſeaſed ſide ſometimes exhibits a livid colour, and gangrene and death enſue.

In the laſt place, the pain in the ſide is ſometimes ſo acute that all movement of the breaſt becomes impoſſible; reſpiration towards the thorax is ſuſpended,

pended, and ſometimes even towards the diaphragm, ſo that the patient dies ſuffocated.

This affection has its ſeat in the pleura: the ſeries of phænomena which it exhibits, its modes of termination, and the reſults which appear on opening the body, leave no doubt on this ſubject.

Pleuritis.

Pleuritis exhibits remarkable ſhades, according to the different parts of the pleura which are affected: thus, a very acute pain is ſometimes experienced below the ſternum, between the ſhoulders, which extends from the ſpine to the ſternum; at other times the pain is profound, and accompanied with anxiety, palpitation of the heart, &c. In ſeveral caſes an exceedingly acute pain extends from the laſt ribs to the laſt vertebræ of the back, with ſhort reſpiration, convulſive hiccup, and delirium. During inſpiration, the patient may experience very ſevere ſhooting pains from the pit of the ſtomach till towards the loins, with a retraction of the hypochondria beneath the ribs, the abdomen remaining motionleſs. In other caſes, the phlegmaſia occupies the whole extent of the breaſt; the patient experiences pungent pains, with oppreſſion, continual anxiety, a conſtant deſire to remain in an upright poſture, &c.: but it is ſeen that theſe acceſſory phænomena are connected with the par-

ticular ſeat of the irritation, and make no change in the eſſential character of the diſeaſe.

There are ſome inſtances of pleuritis in which the pleura alone is affected; but, for the moſt part, this diſeaſe is combined either primitively or conſecutively with phlegmaſia of the lungs; and perhaps it is then alone that it produces death by ſuffocation. It is beſides difficult to comprehend how a pleuriſy could terminate with expectoration, were there no irritation towards the bronchiæ.

Pneumonia, for the moſt part, exhibits phænomena which, according to every appearance, ought to be referred to an affection of the pleura; but how often have we not ſeen the ſymptoms of pneumonia accompanied, in ſome meaſure, with the principal characters of pleuriſy: ſuch as a pungent pain in one of the ſides, increaſing by inſpiration and the motion of the breaſt; a ſmall, dry, and as it were ſtrangled cough; very painful and interrupted reſpiration, a hard full pulſe, &c. without any ſigns of phlegmaſia being found in the pleura after death!

However favourably a pneumonia or pleuriſy may terminate, the reſult always is an alteration in the organ, more or leſs ſtriking, if it be only a peculiar degree of ſenſibility, which diſpoſes it in a ſingular manner for again contracting the ſame diſeaſe. Sometimes there remains, during life, a kind of reſtraint or uneaſineſs; a ſmall cough, which

which returns, eſpecially in certain poſitions, after motion and after meals; or a dull, heavy, or pungent pain, which is felt when the body is placed in a certain poſture, during a ſtrong inſpiration, an effort to cough, to cry, &c. This is the ſtate which Baglivi calls *pleuriſy*, *occult* or *chronic peripneumony*.

This ſtate ſeems to ariſe ſometimes from an inſpiſſation of the pleura, adheſion produced during an acute pleuriſy, the remains or nuclei of phlegmaſic congeſtions, which have not diſappeared by reſolution; the preſence of tubercles or ſmall hard maſſes, occaſioned by lymphatic exudation, become concrete in the pulmonary tiſſue, &c.

This ſtate ſometimes ſucceeds a catarrhal cough, or even ſeems to develop itſelf primitively, eſpecially in individuals remarkable for a peculiar conformation, either natural or acquired. Theſe individuals have a thin, ſlender form; are of a rapid premature growth; have a narrow flat cheſt, projecting ſhoulders, a long ſlender neck, roſy cheeks, a very freſh complexion, acuteneſs ſuperior to their years, and a great deal of nervous ſenſibility. In ſuch perſons, ſudden expoſure to cold, any violent effort, a ſlight attack of fever, the revolution of puberty, &c. determine at firſt a ſpitting of blood *(hæmoptyſis)*, ſometimes abundant, and which is periodically renewed, with a little heat, uneaſineſs at the breaſt, &c. Some very obſcure ſymptoms of pneumonia

are gradually developed; a ſuppuration at length takes place, conſumption is ſlowly eſtabliſhed, and death enſues. On opening the body ſeveral foci of purulent matter are obſerved in the lungs.

17. The reader has here ſeen the hiſtory of pleuritis and of ſimple pneumonia, which take place in an individual who before enjoyed perfect health; but there are few diſeaſes with febrile excitement which may not, in their progreſs, exhibit pneumonic or pleuritic ſymptoms, more or leſs ſtriking, more or leſs continued or tranſient. Theſe ſymptoms ſometimes are the mere reſult of a ſympathetic correſpondence between the breaſt and the organ which is the principal ſeat of the affection, and which may proceed ſo far as to produce a real phlegmonous congeſtion. At other times they ariſe from the exiſtence of a chronic phlegmaſia, perhaps very old, exaſperated by the development of the preſent diſeaſe. In certain caſes it is not improbable that the affection of the pulmonary organ may appear in combination with another diſeaſe; but, for the moſt part, this combination depends on the particular ſtate of the individual before the diſeaſe manifeſts itſelf. It is on theſe principles that we muſt analyſe the hiſtory of epidemical diſeaſes, and the particular obſervations which are found in original authors.

18. Stoll

18. Stoll gives a great many cases of pneumonies or gastric pleurisies. Several days before the attack of the disease, the patient experiences loathing, nausea, and bitterness in the mouth. After its commencement the symptoms are: a violent pain in the head, great sensibility in the epigastric region, vomiting, and sometimes diarrhœa; a strong burning heat, insatiable thirst, &c. An emetic, either with or without previous bleeding, often removes the symptoms of gastric embarrassment, suppresses the spitting of blood, and the affection of the breast speedily terminates. At other times the phlegmatic symptoms disappear, and leave a simple bilious fever: in certain cases, the disease continues its usual course, always retaining some gastric symptoms.

19. Huxham observed peripneumonies of an entirely different character among sailors exhausted by the fatigue of long voyages, and previously affected by scurvy. This disease announces itself by perfect indifference to external objects, weakness on being exposed to the least motion, irregular alternations of shivering and heat. The fever then appears with great heaviness towards the hypochondria, difficulty of breathing, and a dry cough exceedingly oppressive; the pulse is quick, weak, and soft, accompanied with partial and clammy

clammy ſweats; the patient experiences continual anxiety and reſtleſſneſs; expectorates a thin, ſanguinolent, or browniſh and highly fetid liquid; petechiæ and a bloody diarrhœa come on between the fifth and the ſeventh day; the urine is blackiſh, without ſediment; the tongue becomes brown, and the teeth are encruſted with a thick black matter. The patient after this period is exceedingly weak, the pulſe is intermittent, and cold ſweats and ſyncope are frequent. Dr. Huxham having cauſed cupping and ſcarification to be employed in two caſes of this kind, it was found impoſſible to ſtop the bleeding, and the patients died.

In certain epidemiæ, the diſeaſe begins with an acute pain in the ſide, accompanied by a ſevere oppreſſion and very violent cough; the pulſe is ſtrong, quick, and full; but after once or twice bleeding it ſuddenly ſubſides, and is followed by a tumour of the limbs, ſubſultus tendinum, abundant ſweats, black, bilious diarrhœa, and at length drowſineſs or delirium. In this caſe, the blood coagulates with difficulty, and becomes black, and covered by a very fine blue or greeniſh pellicle; while in ſimple phlegmaſiæ of the breaſt the craſſamentum of the blood is very compact, denſe, and covered by a ſkin ſomewhat like that of bacon.

20. *Phlegmaſia of the ſtomach.* When the ſtomach

ſtomach experiences ſtrong and continued irritation, it exhibits a ſeries of phænomena different from that which characterizes the preceding phlegmaſia, but which in many reſpects approaches it.

In this diſeaſe there are firſt obſerved a general coldneſs, ſhivering, ſpontaneous laſſitude, and great dejection, which are ſoon ſucceeded by univerſal heat. The pulſe is accelerated, hard, confined and unequal; the patient experiences great oppreſſion and anxiety, a fixed burning and acute pain in the epigaſtric region, and exceſſive thirſt. By the uſe of the mildeſt beverages the pain is dreadfully increaſed, with vomiting of matter, ſometimes bloody or blackiſh.

The diſeaſe makes a rapid progreſs, and the fever continues without intermiſſion: great oppreſſion and frequent ſyncope take place, with hiccup, repeated convulſions, delirium, coldneſs of the limbs, and the patient ſoon expires. On opening the body the ſtomach is ſometimes found to be gangrened, at leaſt in certain parts. *Gaſtritis.*

21. If this affection be ſlight, it may terminate by an inſenſible reſolution. Like that of the pleura, it ſometimes produces an adheſion of the ſtomach to the neighbouring viſcera, either immediately or by means of an albuminous exudation, which is converted into a membrane-like ſubſtance.

Acute

Acute phlegmaſia of the ſtomach may be excited by the too copious uſe of iced beverage when the body is over-heated; by the introduction of highly irritating ſubſtances into the ſtomach, and particularly of ſome oxides or metallic ſalts. The affection produced by theſe ſubſtances is highly dangerous, and often occaſions very ſudden death.

Hoffmann, however, gives a caſe of ſeveral perſons poiſoned, at an entertainment, by arſenic put into ſome of the diſhes inſtead of ſugar, who were ſaved by the timely uſe of an enormous quantity of milk with oil of ſweet almonds: to ſome of the patients, who uſed theſe ſubſtances in leſs abundance, a great many oily and mucilaginous injections were adminiſtered, and all of them eſcaped: ſome of them vomited a hundred times. When death takes place ſo ſuddenly, the putrefaction is often very rapid; the abdomen ſwells up, an extravaſation of the blood takes place, the hair drops off, &c. The ſtomach is found diſtended, interſperſed with livid ſpots, and ſometimes pierced entirely through; the mouth, the œſophagus and the ſtomach are ſtripped, at leaſt in certain parts, of their mucous tunic; ſometimes the noxious matter is found in its natural ſtate, or diſſolved, in the ſtomach or the firſt inteſtines: it may be known either by inſpection or by chemical analyſis, or by trying it on other animals.

The exquiſite ſenſibility of that organ, and the extenſive connection it has by means of the nerves with every part of the animal œconomy, account in a ſatisfactory manner for the rapid and terrible effects of ſuch læſion. In many caſes, the poiſoned individual often eſcapes ſudden death, only to drag out a miſerable exiſtence with a continual pain in the region of the ſtomach. He experiences a habitual dryneſs and heat of the ſkin; aridity in the mouth and throat, &c.; pains and ſpaſms in the limbs, &c.; a febrile ſtate, and other ſymptoms, which ſometimes gradually decreaſe, but which often terminate in death.

22. Sometimes the tunics of the ſtomach, thickened by a ſlight phlegmaſic affection, remain ſwelled in ſome parts, and particularly towards the orifices of that organ.

Anatomiſts often find the pylorus thick, hard, tuberculous, and ſemi-cartilaginous, with a very conſiderable conſtriction of the orifice.

The affection of the orifice of the pylorus is announced, for the moſt part, by obſtinate vomiting; and that of the orifice of the œſophagus by a very great difficulty or even abſolute impoſſibility of ſwallowing. This ſtate is accompanied by acute pains in the ſtomach, eſpecially after meals. Obſtinate coſtiveneſs takes place, with frequent vomiting, and black or bloody ſtools: a ſlight fever

fever enſues, and a ſlow maraſmus terminates in death.

Theſe tumours of the pylorus are not always ſenſible through the integuments. Being at firſt almoſt indolent, they occaſion no other inconvenience than what ariſes from a conſtriction of the orifices of the ſtomach. In the end, however, they often become exceedingly troubleſome, and are accompanied with ſhooting pains, or a very ſharp ſenſation of pricking. A particular mode of action, by which they are converted into a ſort of ulcers, that diſcharge a ſanious and reddiſh liquid, is ſometimes eſtabliſhed in their interior parts. The patient then experiences a ſenſation of burning, eſpecially when any thing enters the ſtomach, and he vomits up a fetid browniſh liquid.

Anatomiſts often find ſimilar ulcerations in the pylorus, almoſt always accompanied with an inſpiſſation of the tunics of the ſtomach, and a contraction, ſometimes conſiderable, of the calibre of the inteſtines.

This ſtate of inſpiſſation of the ſtomach, with induration, the ulcers at the orifice of the pylorus, and ſometimes at that of the œſophagus, are not the reſult of an acute phlegmaſia alone. They are often formed ſlowly by the concurrence of different irritating cauſes, the continued or frequently repeated action of which excites, in this part, a chronic phlegmaſia, differing from an acute

phlegmaſia only by its degree of intenſity, and by a much ſlower progreſs. In this caſe, the pylorus at length becomes thick and hard, and the orifice is almoſt entirely cloſed; though few ſigns of phlegmaſia can be eaſily diſcovered.

Theſe chronic affections of the ſtomach often coincide with a ſudden ceſſation of ſome habitual excretions: ſuch as hæmorrhoidal flux, the diſcharge of purulent matter towards the anus, and in ſome other parts.

In ſome circumſtances, this malady ſeems to be excited by frequent fits of thoſe melancholy mental affections which produce a contraction towards the epigaſtric region; by exceſſive grief of long continuance; habitual tranſports of paſſion; after the too free uſe of ſpiritous liquors, acids, &c. Perſons thus affected are generally melancholy, gloomy, peeviſh, meagre, and valetudinary. This general ſtate may be either the cauſe or the conſequent effect of organic alteration in the ſtomach.

23. *Phlegmaſia of the inteſtines.* By the influence of cauſes ſimilar to the preceding, the *inteſtinal canal*, in one or more parts of its extent, may be attacked by a phlegmaſia of the ſame nature.

After the uſual ſymptoms, ſuch as coldneſs, ſhivering, tremor, &c. the patient experiences, in ſome part of the abdomen, very acute, fixed, ardent, pungent pains, which are increaſed by the accumulation

accumulation of flatulencies or of liquors. The belly is exceedingly painful when touched; the body becomes very hot, with a hard, tenſe and cloſe pulſe, accompanied by vomiting and obſtinate coſtiveneſs.

The patient labours under great anxiety and continual agitation, accompanied with ſweat and a ſpeedy proſtration of ſtrength. Sometimes the affected inteſtine forms itſelf, under the integuments, into an oblong renitent tumour, exceedingly ſenſible to the touch.

When the phlegmaſia is very acute, accompanied with great irritability, as is the caſe in the female ſex or in children, the patient often falls into convulſions. At other times the pain ſuddenly ceaſes, the pulſe becomes weak, quick, and intermittent; the limbs, ſeized with numbneſs, are covered with a cold ſweat; the face ſhrinks; ſometimes the ſenſes remain, or are even exalted. At other times a gentle and calm delirium takes place; the belly ſwells up, the ſtools are fetid, black, and *cadaverous*, and death ſpeedily enſues. On opening the body, portions of the inteſtines are found withered, flabby, and livid, and ſometimes pierced entirely through, while the neighbouring parts are of a violet or browniſh red colour; turgid, often thickened, or covered with membranous concretions. In other caſes, an

effuſion of ſerous matter, mixed with albuminous flakes, is obſerved in the abdomen. Flakes or membranous fragments are ſometimes found in the fæces: theſe in certain caſes ariſe, no doubt, from an exfoliation of the mucous membrane: at other times they ſeem to be the reſult of an exudation, which has aſſumed a concrete ſtate in the inteſtinal canal.

Sometimes the diſeaſe, much milder, terminates in a few days by a complete reſolution; but it often leaves behind it, and in the part chiefly affected, an habitual ſenſation of heavineſs, with twitching. The patient becomes very ſubject to pains of the colic, coſtiveneſs, vomiting, and even hiccup. At length, after a certain time paſſed in this valetudinary ſtate, there comes on a gradual extenuation, which terminates in conſumption and death. In ſome caſes the patient is ſubject to acute pains, which irregularly increaſe; a fever, ſometimes mild and ſometimes ſevere. After death the inteſtinal tunics are found to be thick, hard, and ſemi-cartilaginous; the inteſtines, knotted, and adhering to each other and to the neighbouring parts, form maſſes which are ſometimes very voluminous; their calibre is contracted, or even entirely obſtructed. The upper parts of the inteſtinal canal are ſtrongly diſtended by gaſeous ſubſtances, or by the excrements. Sometimes

there

there are found ulcerations which diſcharge a liquid generally of a dilute nature, turbid, browniſh, or ſanious, &c. *Acute enteritis.*

24. Theſe different alterations are not always the reſult of acute enteritis. Certain individuals, and particularly females, after experiencing for a very long time an extreme ſenſibility of the abdomen, a ſort of habitual laceration, without fever, heat, or coſtiveneſs, fall at length into a ſtate of languor, which terminates in death. Though no ſymptoms ſimilar to thoſe of acute enteritis appeared; the body, on being opened, may exhibit analogous reſults, ſuch as an effuſion of ſerous matter, flakes, albuminous membranes; the veſſels of the inteſtines turgid, their tunics thick, red, browniſh, indurated, and ſemi-cartilaginous; maſſes of the organs united and agglomerated. *Chronic enteritis.*

Enteritis is occaſioned, in general, by circumſtances analogous to thoſe which may produce all the other phlegmaſiæ: ſuch as violent percuſſion of the abdomen, wounds in the inteſtinal canal, a ſtrangulated hernia, the operation for it, that of cutting for the ſtone, the uſe of highly irritating ſubſtances, poiſons, the preſence of worms, accumulation of the fæcal matters, a running which obſtructs the canal. This diſeaſe ſometimes ſucceeds a hæmorrhoidal or menſtrual ſuppreſſion; it often comes on after parturition; and to it the bad

conſequences of that natural function are in a great meaſure to be aſcribed.

25. A variety of facts, collected during life and after death, atteſt that the uterus often becomes the ſeat of a phlegmaſia, either chronic or acute. The ſides of that organ indeed often exhibit an inſpiſſation and ſemi-cartilaginous induration, in a part or the whole of their extent: towards the neck, in the Fallopian tubes, and the ovaria, there ariſe unequal ulcerations, ſwelled towards their edges, browniſh or livid, which diſcharge blood, with a turbid, reddiſh, fetid and black excretion. The patient experiences, at the bottom of the pelvis, towards the groin or the loins, ſharp, acute pains, which extend ſometimes as far as the hypochondria and the ſhoulders. A violent pain in the head takes place, and the legs become œdematous.

Theſe effects, which are often the reſult of an acute phlegmaſia, come on ſometimes inſenſibly, or with very ſlight but long continued phlegmaſic ſymptoms. Morgagni found, in the poſterior ſide of the uterus, a tumour as large as the head, which had grown up in the courſe of ten years, with a very ſlight pungent but continual pain, and ſome occaſional attacks of fever.

Theſe tumours continue ſometimes very long without having occaſioned much inconvenience. But, when a criſis is eſtabliſhed, which terminates in a ſort of ſuppuration, the pains become for the moſt part

part intolerable, the appetite and ſleep are loſt, the ſtrength gradually declines, the emaciation of the upper parts of the body forms a contraſt with the flabby ſwelling of the legs, and a flux enſues. Analogous affections often take place in other viſcera of the abdomen, particularly in the liver, in the meſentery, in the ſpleen, and often in the pylorus.

Diſeaſes of the uterus, though hitherto conſidered as belonging as much to the province of the *accoucheur* as to that of the *phyſician*, have been very little ſtudied by either. The former, it would appear, adhering cloſely to the ſtudy of one ſyſtem, confines his view within too narrow bounds. Beſides, the very ſtriking influence which the uterus has on divers parts, but particularly on the abdomen, the head and the breaſt, produces in all theſe affections a certain complication, through which it is almoſt always impoſſible to diſcover the character of the primitive diſeaſe: this is a reaſon alſo why our knowledge, in regard to this part, has made ſo little progreſs.

To the antients, therefore, and particularly Hippocrates and Aretæus, we are indebted for our moſt correct ideas in regard to acute uterine phlegmaſiæ. After a paroxyſm of ſhivering, more or leſs apparent, ſpeedily followed by an univerſal heat, with headach, aridity of the tongue, violent thirſt, quick and hard pulſe, the patient experiences a tenſion, with a fixed, acute, pungent pain in the

the hypogaſtric region. This pain ſometimes has its particular ſeat towards the ſacrum and the loins, and is accompanied with coſtiveneſs, and ſimultaneous compreſſion or irritation of the rectum; ſometimes towards the pubis, with a frequent deſire to make water, and a ſenſation of burning when the urine paſſes.

In certain caſes, the patient experiences tenſion towards the groin, with numbneſs and heavineſs in the thighs, &c. Sometimes the pain ſeems to be ſituated profoundly in the pelvis, and the finger finds the orifice of the uterus ſwelled, hard, and renitent.

Parturition is almoſt always followed by analogous phænomena, which terminate in the courſe of a few days, at the ſame time that a ſecretion of milk takes place in the breaſts. But in certain caſes the affection becomes much more violent, with a compreſſion of the abdomen, phlogoſis in the meſentery and inteſtines, and very great ſenſibility throughout the whole extent of the abdomen. The lochia are then ſuppreſſed, the mammellæ no longer ſwell up, or they ſink down; the face becomes red and voluminous, the eyes project, and a few drops of blood frequently fall from the noſe. The patient ſoon experiences great agitation, watchfulneſs or diſturbed ſleep; reſpiration is difficult; delirium takes place, with convulſions, pains throughout the whole body, a proſtration of ſtrength,

ſtrength, ſhrinking of the viſage, and frequent fits of fainting; the pulſe, which is at firſt hard and cloſe, becomes almoſt imperceptible, and death often enſues on the ſeventh, ninth, or eleventh day. On opening the body, the uterus is found ſwelled, hard, and browniſh; ſometimes corrupted and gangrenous. In the abdomen is very often obſerved a whitiſh ſerous liquid, containing ſometimes ſhreds of albumen in a concrete membranous form, and ſometimes albuminous flakes. At other times this liquid is whitened, almoſt uniformly, by the mixture of a grumous matter of the ſame nature. This liquid, ſimilar to that produced in the male in the caſe of enteritis, is conſidered by ſome phyſicians as milk effuſed into the abdomen.

A favourable iſſue may, in general, be hoped for when the ſtrength is pretty well maintained; when the breaſts ſwell up, when the uterine evacuations reſume a free courſe, or when an abundant hæmorrhoidal flux takes place.

A wound in the uterus, a blow on the abdomen during pregnancy, a difficult parturition, may determine a phlegmaſia of this organ.

It is during the courſe of menſtruation, and particularly after delivery, that women are moſt expoſed to the danger of contracting this malady. The ſenſibility of the organ being then greatly exalted ſeems to concentrate in it all the irradia-

tions of life. It is there that all the poſſible cauſes of phyſical or moral irritation are felt in an alarming manner: tranſports of paſſion, ſudden fear, too ardent affections, any violent effort, the impreſſion of cold. The abdomen almoſt always participates in the effects of the diſeaſe. After delivery, in particular, there is produced in all the viſcera of that cavity a very great revolution, ariſing from the ſudden removal of a ſupport to which they were habituated; from the efforts by which the whole abdominal ſyſtem concurred to the act of parturition; from the intimate connection between theſe viſcera and the uterus; and from the very ſtriking change produced at that period in the circulation of the fluids, all the movements of which ſeem to be directed in a ſpecial manner towards the abdomen.

This affection often attacks women exhauſted by fatigue, by poverty, and every kind of want, when ſurrounded by inſalubrious objects, in crowded hoſpitals, &c. The diſeaſe being then combined with adynamic fever makes a rapid progreſs, and almoſt always produces death. *Puerperal fever.*

Chronic phlegmaſiæ of the uterus may take place under the ſame circumſtances; but they appear chiefly towards the period of the ceſſation of the menſes in women who lead too ſedentary a life, who live poorly, who are a prey to ſorrow

and grief, who obſerve a continence contrary to the deſires of nature, &c. *Hyſteritis.*

26. If a man receives a violent contuſion in the perinæum or the hypogaſtric region, he may experience, after a certain time, towards the pubis, an acute ſettled pain, with a continual deſire, a very great difficulty, and even impoſſibility of voiding urine; the urine is red and ſcorching; a hard tumour, ſenſible to the touch and even to the eye, appears above the pubis, accompanied by acute fever, thirſt, and ſometimes teneſmus. In certain caſes, ſome ſymptoms make their appearance towards the genitals, the ureters, and the kidneys. In conſequence of the further progreſs of the diſeaſe, the patient experiences hiccup, vomiting, delirium, and coldneſs of the limbs. Phlegmaſia of the bladder follows the ſame courſe as that of the ſtomach or inteſtines. The reſolution is effected in analogous periods, and ſometimes with ſanguinolent evacuations, either by the urinary paſſage or the anus. Lymphatic exudations take place, with albuminous concretions, and adheſion of the bladder to the neighbouring parts; the tunics ſometimes remain thick and indurated, and after a certain indeterminate time become ulcerated. The diſeaſe often terminates by gangrene, eſpecially if, in the caſe of a complete ſuppreſſion

of

of urine, care has not been taken to evacuate that liquid by means of the catheter.

A wound in the bladder, the uſe of highly ſtimulating diuretics, cantharides, the preſence of a calculus with ſharp points, may determine this malady, which however takes place ſometimes without very apparent cauſes. *Cyſtitis.*

27. The different phlegmaſiæ of the ſerous membranes, the hiſtory of which has been here given, all belong to the ſame family; and phlegmon, which being expoſed to the eye ſuffers all its gradations to be clearly ſeen, may be conſidered as their common type. The phænomena peculiar to each of theſe phlegmaſiæ ariſe from a derangement of the functions proper to the ſyſtems affected. Thus pleuriſy is attended with difficulty of reſpiration, oppreſſion, heavy or acute pain in the breaſt, cough, expectoration, &c. In hepatitis the ſymptoms are, coſtiveneſs, tenſion, and pain in the right hypochondrium, dry cough, &c. In nephritis, pain towards the lumbar region, frequent deſire to make water, red urine, ſcorching as it paſſes, and ſometimes purely aqueous, &c.

Theſe phlegmaſiæ exhibit alſo other phænomena, which depend on the correſpondence of the affected viſcera with parts more or leſs diſtant:

diſtant: ſuch as headach, dark red colour of one or both cheeks, in peripneumony; oppreſſion, hiccup, vomiting, &c. in hepatitis; numbneſs of the leg, retraction of the teſticle, and convulſions, during nephritis.

The general phænomena, however, are always the ſame: febrile excitement with a quick, hard pulſe, univerſal heat, ardent thirſt. Three very diſtinct periods are obſerved: 1ſt, Fixed irritation in the part, new mode of action, afflux of fluids; heat, pain, intumeſcence with renitent hardneſs, gradual increaſe of the diſeaſe. 2d, All the ſymptoms at the higheſt degree, the reſolution is always marked by a gradual diminution of pain, heat, &c. combined, for the moſt part, with an excretion of a peculiar character, or a painful ſhooting in the part, the prelude to or rather the labour of ſuppuration. At the third period the phænomena of ſuppuration are eſtabliſhed.

This ſuppuration gives riſe to ulcers always exceedingly troubleſome in the interior organs; in ſome individuals of a ſtrong robuſt conſtitution they may cicatrize; but, for the moſt part, they produce chronic affections, which lead ſlowly to a ſtate of conſumption.

In the laſt place, the phænomena of gangrenous termination are every where the ſame; a ſudden

ſudden ceſſation of pain, weakneſs and depreſſion of the pulſe; ſpeedy proſtration of ſtrength, debility, dejection, ſhrinking of the viſage, &c. theſe ſymptoms, in all caſes, announce approaching death.

PHILEG-

PHLEGMASIÆ OF THE MUCOUS MEMBRANES.

28. NOTHING is more common than phlegmaſiæ of the mucous membrane of the noſtrils (cold in the noſe, *coryza*). This affection is often produced by paſſing ſuddenly, in any manner whatever, from a warm temperature to one much colder. It takes place, in particular, when people ſuffer wet clothes to become dry on their bodies.

This malady announces itſelf by an irritation in the ſides of the naſal foſſæ; the habitual ſecretion of the membrane by which they are lined decreaſes, and is ſoon entirely ſuſpended; the patient experiences a ſenſation of ardor, dryneſs, and plenitude in the noſtrils, with a difficulty or impoſſibility of breathing through them; he ſpeaks through the noſe, and the ſenſe of ſmelling becomes exceedingly weak. The olfactory membrane being thickened, produces a ſenſation of pricking, frequent ſneezing, and a continual deſire of blowing the noſe, but without effect. The patient experiences a dull, tenſe pain, with a ſenſation of heavineſs towards the frontal ſinuſes. Theſe ſymptoms gradually increaſe, and are ſoon follow-

ed by a diſcharge, not very abundant, of a limpid and highly irritant ſeroſity, which produces redneſs, heat, ſmarting, and ſometimes excoriation at the extremity of the noſe and in the lip.

At length, the ſymptoms are gradually moderated; the mucus becomes thicker and leſs acrid; is white and opake, and at laſt reſumes its natural character. This affection, always very irregular in its progreſs, but more or leſs rapid, is generally circumſcribed within the ſpace of from five to ten days.

29. Sometimes the diſeaſe fixes its ſeat on the interior membrane of the trachea and the bronchiæ. In this caſe, the patient experiences in theſe parts a ſenſation of dryneſs; a titillation which excites a cough, at firſt dry and always painful: ſome ſymptoms of general derangement alſo take place.

The pain is particularly fixed in one point of the aërian paſſages, which correſponds to the larynx, or behind the ſternum, and which ſometimes is profoundly ſeated in the breaſt: in this caſe it is greatly increaſed by coughing and by inſpiration.

The patient often experiences oppreſſion; a great difficulty in making the air reach the extremities of the bronchiæ, on account no doubt of their great ſenſibility, and the ſwelling of their interior

terior membrane. An expectoration of a matter at firſt viſcid and highly irritant, which excites and maintains cough, and which is ſometimes ſtriated with blood, then takes place: this matter gradually thickens, and becomes milder.

At length the ſymptoms, which have gradually decreaſed, diſappear entirely, when the expectorated matter, white, thick, and ſometimes puriform, is eaſily expelled by a cough no longer fatiguing. This affection, diſtinguiſhed by the name of *a cold*, is exceedingly variable in its duration.

30. The interior part of the mouth is often the ſeat of a ſimilar affection, which occupies the whole of it, or is confined only to ſome parts. It announces itſelf by ſwelling, redneſs, a ſenſation of dryneſs and ſmarting ardor; the patient experiences a diſagreeable pricking in the place affected, and ſometimes an acute pain on its being touched, either by the tongue, the teeth, or the aliments. The irritation, in general, extends to the ſalivary glands, which become ſwelled, forming a protuberance, ſometimes very painful to the touch, towards the angles of the jaw.

At the end of a certain time the mouth becomes moiſt, and is filled with a ropy mucous matter, which gradually thickens. At this period, ſmall excoriations (aphthæ), the reſult of an exfoliation of the epidermis which covers the mu-

cous membrane, is ſometimes obſerved in certain parts of the mouth, or of the tongue. At length the affection diſappears, after paſſing through, in a period which in general is pretty long, ſtages perfectly ſimilar to thoſe of the preceding diſeaſes. *Catarrh of the mouth.*

31. If the affection attacks the membranes of the throat and of the back part of the mouth, the patient firſt experiences a ſenſation of ardor and tenſion, with dryneſs and aſperity in the throat, and a contraction in that part; he even experiences pain in ſwallowing his ſaliva. When the irritation has extended to the membranes of the larynx, he cannot breathe freely, and is ſubject to a cough more or leſs frequent: this irritation is propagated ſometimes through the guttural conduits, as far as the interior part of the ears.

The parts affected are of a bright red colour, and ſwelled: when preſſed externally they are often painful: it frequently happens that the diſeaſe confines itſelf to one ſide, and ſeems to be checked by the median line.

At the end of a ſhort period there is an excretion of a mucous matter, at firſt clear and acrid, which gradually thickens, and becomes more abundant and milder. The ſwelling and redneſs decreaſe in the ſame proportion; and the parts at length return to their natural ſtate. *Angina.*

32. In other caſes, the irritation fixes itſelf par-

ticularly in the mucous membrane of the inteſtines. The ſymptoms then are: wandering pains in the abdomen, characterized by a ſenſation of preſſure, tenſion, twitching, and pinching in the inteſtines. Theſe pains, more or leſs acute, traverſe in a continued manner ſeveral of the inteſtinal circumvolutions or curvatures. A rumbling noiſe *(borborygmus)*, which as well as the pain ſeems to ariſe from the progreſſion of gaſeous ſubſtances in the canal, is frequently heard. Theſe ſymptoms, which proceed for the moſt part by very ſhort paroxyſms, more or leſs repeated, occaſion ſometimes very ſpeedily a general weakneſs, and often the preſenſation of an approaching ſyncope. A looſeneſs, which ſeems to give relief, then comes on: ſoon after the pains are renewed, the ſtools become progreſſively more frequent, and are always liquid: at length the ſymptoms ſubſide, the ſtools are rarer, and thicker, and health is reſtored more or leſs completely.

33. A ſimilar irritation in the conjunctive membrane produces at firſt a ſenſation of ardor, with pricking, tenſion, dryneſs, and difficulty in the motion of the ball of the eye. The afflux of blood dilates the ſanguiferous veſſels, and ſeems to fill with a red injection thoſe which, in their uſual ſtate, receive only diaphanous liquids. The conjunctive membrane ſwells, and becomes red.

The irritation is propagated as far as the lacrymal gland; the ſecretion of this organ is increaſed, and changes its nature; the tears irritate the edges of the eyelids, and ſometimes even the cheeks. The eye acquires extreme ſenſibility; it cannot endure the light, and the eye-lids remain ſhut.

After the ſymptoms have thus progreſſively increaſed, they remain ſome time in the ſame ſtate, and then gradually decreaſe. The ſwelling, redneſs, and effuſion of tears ſubſide; ſometimes a gentle excretion of a thick matter takes place towards the edge of the eye-lids; and every thing at length returns to its natural ſtate.

34. Phlegmaſiæ of the mucous membranes, which line the different pneumo-gaſtric organs, are, in general, only ſlight indiſpoſitions; and often ſeem to be ſuſpended by the natural reſiſtance of a conſtitution little diſpoſed for mucous affection. In the commencement of their attack, they are frequently interrupted by means capable of producing a gentle and general tranſpiration, ſuch as hot liquors, a warm bed, &c.

It is almoſt always poſſible to check theſe phlegmaſiæ at their commencement by the impreſſion of a perturbing movement, communicated either to the organ affected, or to a part which has a ſympathetic correſpondence with it, by means of emetics, veſicatories, continued friction, &c.

Some-

Sometimes the affection, when ſlight, confines itſelf to local ſymptoms; but very often its intenſity produces a derangement in the whole œconomy, as may be judged from the general ſymptoms by which it is accompanied. Thus heavineſs in the head, hebetude in the intellectual operations, general laſſitude, a ſenſation as if the limbs were bruiſed, a decreaſe or total loſs of appetite, loathing, &c. take place. Sometimes the attack of the diſeaſe is marked by ſhivering, with alternations of heat, and theſe are followed by acceleration of the pulſe, headache, want of ſleep, &c. Similar paroxyſms come on every evening and night, during the firſt, and a part of the ſecond period; but they always diſappear when the ſymptoms decreaſe, and when the ſecretions become mild, thick, and abundant.

Theſe diſeaſes, when left to themſelves, always terminate favourably: in perſons, however, enfeebled by debilitants, or the too long uſe of aqueous beverages, the latter period may continue an indefinite time. A ſlight degree of irritation maintains, as if by habit, the thickening of the membrane, the afflux of liquids, and a ſecretion which in the end exhauſts the patient. Hence there come on chronic catarrhs of the bronchiæ, which at length conduct to phthiſis; habitual ophthalmiæ, &c. All theſe ſecondary affections ariſe from a general debility, or a peculiar weak-

neſs of the diſeaſed organ; and to prevent theſe, it will be proper to make uſe of aromatics and other corroborants at the third period of the diſeaſe.

Sometimes, after theſe affections, eſpecially if they have been obſtinate, and have often recurred, the membrane retains a certain degree of thickneſs. Thus ſmall red permanent ſtriæ, ariſing from a varicoſe ſtate of the blood-veſſels, are obſerved in the conjunctive membrane, and ſometimes opake and whitiſh ſpots in the cornea. On the naſal membrane there ariſe fungous excreſcences of greater or leſs conſiſtence, and which ſometimes terminate in ulceration (*mucous or carcinomatous polypes, ulcers, ozænæ*, &c.). In the pharynx there often remain a certain difficulty of deglutition; a conſtriction of the throat, which proceeds from the thickening of the mucous membrane; and ſometimes even a ſwelling with an induration of the tonſillæ.

Theſe affections for the moſt part leave behind them a peculiar diſpoſition, a ſort of aptitude for readily contracting them again; and after ſeveral ſucceſſive attacks, eſpecially in the ſame point, the affection fixes itſelf in an invariable manner, and is perpetuated by the force of habit.

35. In aquatic and marſhy countries, during damp ſeaſons, and ſudden variations of the temperature, all theſe diſeaſes often aſſume an epidemic character.

Coryza,

Coryza, ophthalmiæ, ſore throats, catarrhs of the breaſt, dyſenteries, &c. are then indiſcriminately obſerved; the ſame individual very frequently experiences many of them in ſucceſſion; and we have the hiſtories of ſome epidemiæ in which almoſt all the mucous membranes were affected.

Affections of the mucous membranes, when epidemic, exhibit in general a more ſerious character. In this caſe they are for the moſt part accompanied with a ſort of weakneſs, a ſtate of general adynamia, which often renders them complicated and exceedingly troubleſome.

As theſe epidemiæ are very intereſting, on account of the ravage which they occaſion, we ſhall give the hiſtory of thoſe which are beſt known.

36. *Anginæ.* Catarrhal angina very often preſents itſelf with ſymptoms of gaſtric derangement, acute pain in the head, redneſs of the face, ſenſibility to the touch in the epigaſtrium, ſenſation of fulneſs in the ſtomach, eructation of bitter matter, nauſea, vomiting, loſs of appetite, bitterneſs in the mouth, yellowiſh cruſt of greater or leſs thickneſs on the tongue. In the commencement, the impreſſion of a ſhock on the ſtomach is often ſufficient to remove the gaſtric ſymptoms, and ſometimes the diſeaſe itſelf.

But the moſt troubleſome caſe is that where the angina

angina exhibits ſtriking characters of *adynamia*. The attack of the diſeaſe is then commonly announced by ſhivering, with alternations of heat and cold, ſevere pains in the head; the eyes are dull, reddiſh, and watery; the viſage is full, red, and puffed up, ſometimes pale and ſad. The patient experiences a foreneſs in the throat, with hoarſeneſs, a ſmall cough, pain in the ſtomach, vomiting, and frequent ſtools. The laſt-mentioned ſymptom occurs in particular in children. Great dejection is obſerved in the patient, with ſudden weakneſs, and frequent ſyncope. He labours under great oppreſſion, the pulſe is quick, ſmall and tremulous, with exacerbation in the evening and at night, during the whole courſe of the diſeaſe.

Soon after, there comes on a painful ſwelling in the fauces, the tonſillæ, and ſometimes the parotid and maxillary glands. The throat aſſumes a ſhining bright red or crimſon colour, very often interſperſed with whitiſh or aſh-coloured ſpots, which rapidly extend. The breath then becomes highly fetid, and in ſome hours inſupportable even to the patient; towards the ſecond or third day deglutition is exceedingly difficult, the voice is hoarſe, and even accompanied with a ſort of rattling. The patient experiences pain in the head, confuſion and heavineſs, want of ſleep, anxiety, and ſometimes phrenſy; at other times mere

ſtupor

ſtupor and ſtarting, uttering a few interrupted words.

On the fourth or fifth day an expectoration of a mucous, ſanguinolent, livid, and exceedingly fetid matter ſometimes takes place; ſometimes alſo, eſpecially in children, a diſcharge from the noſtrils of a ſanious liquid, which corrodes the lips and the cheeks, with continual ſneezing, the ſudden ceſſation of which always announces death: ſometimes, notwithſtanding theſe ſymptoms, deglutition remains ſtill eaſy.

The eſſential ſymptoms of this malady are as follow: ſmall, frequent, and unequal pulſe; ſudden decreaſe of phyſical ſtrength and of the intellectual faculties; anxiety, continual ſighing, great oppreſſion towards the hypochondria; heavy, watery, dull eyes; fetid breath; pain in the back part of the mouth; ſhining crimſon colour of the fauces, with white or aſh-coloured puſtules or ſpots; efflorescence on different parts of the body, &c. When opened after death, gangrenous ſpots are found in the throat, in the bronchiæ, and on the intellines, with excoriation of the mucous membrane.

This diſeaſe terminates favourably when the following characters are obſerved about the third or fourth day: gentle ſweat, pulſe ſtronger and equal, ſucceſſive falling of the ſloughs, leaving the ulcers

of

of a bright colour, reſpiration freer, the eyes leſs dull, urine turbid with a farinaceous ſediment, abundant expectoration, very extenſive deſquamation from the ſkin.

This affection ſometimes produces death in two or three days, with ſymptoms of peripneumony, phrenſy, apoplexy, &c. In general, the diſeaſe attains to its higheſt period on the fifth or ſixth day, but ſometimes, and particularly in old perſons, not till the eleventh or twelfth. The ſigns of approaching death are: ſhivering, followed by a ſhrinking or lividity of the ſkin; ſmall and frequent pulſe, deadneſs of the eyes, pale limpid urine, cold clammy ſweat, hiccup, rattling in the throat; fetid, livid, involuntary ſtools; the viſage ſometimes puffed up and ſhining as if oily, ſwelling of the neck, general œdema, &c.

37. Angina exhibits remarkable varieties, according to the parts which are its principal ſeat.

Thus, when the paſſage of the aliments, drink, and ſaliva, through the gullet occaſions much pain; when this part produces an abundant excretion; when an acute pain is propagated as far as the ears, with crepitation towards that part during deglutition; when the throat, on inſpection, exhibits a ſwelling of the tonſillæ and of the velum palati; in a word, if excretion becomes abundant at the

ſecond

ſecond period, the affection has its principal ſeat in the tonſillary glands. *Angina tonſillaris.*

38. When the malady affects the pharynx reſpiration is eaſy, deglutition painful or impoſſible, and the aliments return through the noſe: there is a ſwelling and redneſs in the bottom of the back part of the mouth. *Angina pharyngea.*

39. When the affection extends along the tracheal artery, the patient, without exhibiting any exterior ſymptoms, experiences heat in that part: the voice is ſharp and hiſſing, reſpiration is painful and ſhort, and he experiences a ſtrong ſenſe of ſuffocation. *Angina trachealis.*

40. In the laſt place, when along with the preceding ſymptoms the pain is exceedingly acute when the larynx is moved by ſpeaking and deglutition, when the voice is very weak, the words ſhort and uttered with difficulty, the larynx is affected. *Angina laryngea.*

The two laſt varieties, which are the moſt terrible, exhibit no external ſymptoms. It may be readily conceived that when the phlegmaſic irritation is very great, it may extend, at the ſame time, to ſeveral of the regions before mentioned.

41. One kind of angina laryngea, exceedingly troubleſome,

troubleſome, is almoſt excluſively peculiar to children; it is very common, and as it were endemial, on the coaſts of Scotland, and in certain parts of Sweden. It has appeared ſometimes in England, Italy, Holland, and Germany: it always affects ſeveral individuals in the places where it prevails, and has often proved exceedingly fatal.

This affection, beſides the general characters of catarrhal angina, has ſymptoms peculiar to itſelf. Thus reſpiration, difficult and profound, is performed with a peculiar noiſe, which may be compared to the cackling of geeſe, and which ſometimes is heard only in the effort to cough.

The progreſs of the diſeaſe is exceedingly rapid, reſpiration becomes convulſive, the mouth remains open, the neck is lengthened, the larynx riſes up, and yet deglutition is not impeded.

The patient exhibits great dejection; the pulſe is weak, frequent, and intermittent. Sometimes the ſymptoms become ſuddenly milder; the child ſports, walks about, and in two minutes is ſuffocated by a new exacerbation. At other times the diſeaſe follows a uniform progreſs, and the child dies with the full uſe of its intellectual faculties and functions. The patient is in general cured, when it can reject through the mouth a large quantity of mucous matter or membrane-like concretions.

The diſeaſe exhibits nothing conſtant, either in its

its progreſs or duration; death often takes place on the ſecond, third, or fourth day; it has even happened on the eighteenth. The cure is ſometimes retarded for ſeveral weeks.

After death, the viſage is ſwelled and livid, the eyes project, and are turgid, &c. as in the caſe of ſuffocation. Some traces of phlegmaſia are found, but rarely, in the back part of the mouth and the pharynx. The larynx is lined by a membrane-like cruſt, which extends a great way into the bronchiæ: this falſe membrane is ſometimes very thin; at others it fills the trachea almoſt exactly; and in this cavity it is, for the moſt part, of ſuch a conſiſtence, that it can be removed entire in the form of a tube; but along the bronchiæ it commonly has the form of a whitiſh, flabby pulp. This falſe membrane ſeems to be merely the reſult of a lymphatic exudation, which has aſſumed a concrete form on the ſides of the aërian canal.

The healing means recommended for this variety of angina, and for all the others, are: thoſe which tend directly to diminiſh the intenſity of the local phlegmaſia, and thoſe capable of producing a perturbing movement, a ſtrong and continued action on the organ affected, or on the ſurrounding parts: ſuch as the application of leeches, ſcarification, and emetics; and in the ſecond period ſtrong ſtimulants, as emetics, vinegar of ſquills,

kermes, the long continued inſpiration of ſulphuric ether, &c.

42. Pulmonary catarrh is ſometimes accompanied with an embarraſſment in the gaſtro-hepatic ſyſtem, but rarely with a real bilious fever. In this caſe, an emetic makes the gaſtric ſymptoms ſpeedily diſappear, if it does not entirely remove the diſeaſe. This complication conſtitutes the character of *pleuriſies*, or *gaſtric peripneumonies*, of which Stoll has traced out the hiſtory in the firſt part of his *Ratio Medendi*.

43. Pulmonary catarrh is much more troubleſome when a real adynamia ſpeedily enſues, as was the caſe in the epidemic diſeaſe obſerved by Hoffmann in 1728. It announces itſelf by great languor, with a heavineſs of the head, loſs of appetite, and nauſea; the pulſe weak and frequent. The patient experiences fits of ſhivering followed by heat; great uneaſineſs in the cheſt, with cough, coryza, &c. Towards the fourth day the oppreſſion becomes very great, and is accompanied with anxiety, extreme weakneſs, and delirium. On the ſeventh day petechial miliary eruptions appear. The diſeaſe terminates favourably when a gentle ſweat comes on about the ſeventh day, and a diarrhœa on the fifth or tenth; but if tranſpiration

tion is abundant in the beginning; if the exanthema is not followed by remiſſion; if the urine depoſits no ſediment; if the coſtiveneſs is permanent; and if the ſkin be dry, without any thirſt, the agitation increaſes, convulſions with hiccup ſoon come on, and death ſpeedily enſues.

44. The breaſt alſo is ſubject to a diſeaſe, generally epidemic, which affects the individual only once, and which comes on, for the moſt part, in infancy.

It generally begins like a common cold; but towards the fifteenth or twentieth day the cough aſſumes a convulſive character, which conſiſts in rapid and ſucceſſive movements of expiration, with a peculiar noiſe ſuddenly followed by a complete inſpiration. This cough is ſometimes ſo violent and ſo precipitate, that the child ſeems ready to be ſuffocated; it continues in this manner till a mucous expectoration, or even vomiting, comes on; after which it ceaſes for ſome time.

This expectoration takes place, in general, after the effort to cough which follows the ſecond ſonorous inſpiration. Sometimes there is none. At firſt the child does not expectorate, or throws up only limpid mucus; the paroxyſms are then more violent, and of longer duration; but they afterwards become ſhorter, as expectoration is more abundant and eaſier.

After the cough, reſpiration is ſometimes quick, and a ſenſation of fatigue, which continues a longer or ſhorter time, remains; but the children, in general, return to their play.

In certain caſes, the paroxyſms ſeem to be excited by violent exerciſe; exceſs of food; the inſpiration of air charged with duſt, ſmoke, ſtrong odours, and particularly by all violent mental affections. They are often renewed without any apparent cauſe.

The intervals of tranquillity are exceedingly variable, and the return of the paroxyſms is more frequent in the night-time than during the day. When the patient feels a new paroxyſm coming on, he generally takes ſtrong hold of any thing near him, or deſires ſome one to ſupport him. This affection continues from one to three months, ſometimes more, and exhibits great varieties.

During the violent paroxyſms, the face becomes turgid and red. At other times a hæmorrhagy from the noſe, the ears, or even the eyes, takes place. Sometimes fever comes on, even at the commencement, but oftener at the end of ſome time: to a certain degree it is continued, but increaſes in the night-time (*catarrh*).

The diſeaſe, in general, is more dangerous and oftener proves mortal below the age of two years: it is exceedingly troubleſome in weak children born of phthiſical or aſthmatic parents, eſpecially when

when there is no expectoration, and when the cough is very violent, with a great difficulty of reſpiration.

On the other hand, there is no danger when the paroxyſms are neither frequent nor violent; when the patient, without fever, or difficulty of breathing during the intervals, ſleeps well and eats well; when the paroxyſms, followed by vomiting, produce an extraordinary appetite, &c.: in the laſt place, a moderate naſal hæmorrhagy is, in general, a favourable ſymptom.

This diſeaſe is produced by a convulſive movement of the diaphragm and the breaſt. It is ſometimes checked, in the commencement, by irritants conveyed to the gaſtric ſyſtem, ſuch as purgatives, and emetics taken in ſuch a manner as to excite vomiting, and then nauſea. When it is already pretty inveterate, it ſeems to continue by the force of habit, which may be interrupted by any change ſuddenly effected and maintained in the organization; by the attack of another diſeaſe; by all violent affections: the uſe of tonics, and particularly cinchona, has often been ſucceſsful.

45. Mucous phlegmaſiæ of the inteſtines are for the moſt part epidemic, and ſometimes occaſion very great ravage; which renders it of great importance to ſtudy the hiſtory of them. In reading

an account of the epidemic dyſenteries obſerved by Zimmermann, Pringle, Vagler, &c. it is ſeen that this diſeaſe aſſumes peculiar characters, according to the degree of adynamia which accompanies it, and to the peculiar affection of ſome organs with which it is combined.

The ſimpleſt is particularly prevalent towards the end of ſummer, when the ſtrong heats are ſucceeded by rains, with great variations in the ſtate of the atmoſphere, and a very ſtriking contraſt between the heat of the day and the coolneſs of the night. It generally takes place after a ſudden or ſtrong impreſſion of cold, long continued, eſpecially on the feet or legs; after ſleeping a night on the damp ground; in perſons who have a particular prediſpoſition for it, and perhaps a ſtate of debility in the inteſtinal ſyſtem, an effect commonly produced by the great heats of ſummer, and ſometimes alſo by the immoderate uſe of fruits.

Some days before its attack, the patient complains of general laſſitude, a ſenſation in the limbs and towards the loins as if bruiſed, with a heavineſs of body and mind; diminution or total loſs of appetite, loathing, ſlight ſenſation of cold, or wandering and tranſient ſhiverings: ſometimes real catarrhal affections come on, ſuch as ophthalmia, coryza, ſore throat, diarrhœa, &c.

The diſeaſe, at length, announces itſelf by a more

more apparent ſhivering, interrupted by fluſhes of heat, with nauſea or vomiting. The patient experiences, at the ſame time, a very painful conſtriction towards the epigaſtrium, gripes, or a painful ſenſation of tenſion, twitching, and twiſting in the inteſtines; flatulencies in the abdomen, with a rumbling of the guts; ſometimes the coſtiveneſs is obſtinate, and there afterwards comes on a frequent but ineffectual deſire to go to ſtool: the patient makes violent efforts to gratify this want, and it then appears as if all the viſcera had deſcended towards the anus; ſometimes the rectum is inverted and hangs down. The patient experiences a ſharp, ſcorching heat towards the ſacrum, and a conſtriction of the anus, with the impoſſibility of introducing a ſyringe.

At the end of ſome days a little relaxation takes place in the rectum; the ſtools, at firſt ſmall in quantity, but very frequent, are liquid, ſpumous, and more or leſs turbid, like the water in which meat has been waſhed; ſtreaked with blood, and ſometimes entirely ſanguinolent; ſometimes they are ſo acrid that the circumference of the anus is inflamed or even excoriated. Theſe evacuations always ſucceed a paroxyſm of very violent pains in the bowels, which they for a moment mitigate. There always exiſts in the colon a certain kind of conſtriction.

By little and little the ſtools become more

abundant, as well as thicker, and the ſymptoms decreaſe in the ſame proportion. A long time after the patient experiences, towards the rectum, an uneaſy ſenſation, which ſeems to ariſe from the preſence of the fæces ready to be protruded. The pains in the belly become more moderate, and return only at long intervals; the diſeaſe gradually changes into a ſimple diarrhœa; the excretions, ſtill frequent and copious, at length gradually reſume their natural character; and the cure is generally completed on the twentieth, twenty-fifth, or thirtieth day.

Epidemic dyſenteries rarely exhibit this character of ſimplicity; and in general it is found only in thoſe which attack here and there a ſmall number of individuals. They are accompanied for the moſt part by gaſtric ſymptoms: of this kind is that the deſcription of which forms the commencement of Zimmermann's Treatiſe.

After preliminary ſymptoms, very like the preceding, there comes on an univerſal cold, ſometimes ſlight, and ſometimes carried to ſuch a degree as to produce tremor, interrupted by fluſhes of heat, anxiety, *great ſenſibility of the epigaſtrium*; very acute griping pain in the abdomen; ſenſible weakneſs, chiefly towards the dorſal and lumbar regions. After the diſeaſe has made its appearance, *the mouth becomes bitter*; *the tongue acquires a bright red colour, and is covered by a yellowiſh cruſt*;

cruſt; the patient has an ardent thirſt, with nauſea and bilious vomiting; the pain in the head is often inſupportable; the heat univerſal, the pulſe accelerated, with a very ſenſible increaſe in the evening and at night; loſs of ſleep. At the end of ſome days the ſtools, thin, mucous, and ſometimes bloody, are always preceded or even followed by violent griping pains in the bowels, teneſmus exceedingly fatiguing, and ardor towards the rectum; the urine is ſcorching, with a continual but ineffectual deſire to make water.

The ſame author, who has often ſeen theſe epidemic diſeaſes in Swiſſerland, deſcribes another complication more troubleſome, the characteriſtic features of which may be found in the hiſtory of thoſe obſerved by Pringle.

The commencement is marked by ſhivering, which ſeveral times re-appears in the courſe of the diſeaſe, and proſtration of ſtrength ſpeedily takes place. The patient, regardleſs of his ſtate, experiences a preſſure at the pit of the ſtomach; heavineſs in the head; ſometimes an exceedingly violent cephalalgia; at times a calm delirium, with an extraordinary, thoughtful or ecſtatic look; the voice becomes weak and altered; deglutition is ſometimes difficult, and accompanied by vomiting, which affords no relief. The ſtools are either very rare, notwithſtanding the continual deſire, or exceedingly frequent, and in a few hours the pa-

tient ſeems ready to expire. The fæcal matters change their character every moment; and are green, black, tinged with blood, or entirely ſanguinolent, and exceſſively fetid; the urine is ſcorching, rare or ſuppreſſed; the breath fetid, thirſt exceſſive, and the patient has an ardent deſire for ſtrengthening beverages: the pulſe is ſmall, cloſe, and profound; the ſkin, dry, arid, and corrugated, drops off in ſmall ſcales; it is ſometimes cold and clammy; the face becomes altered; exanthemata of different kinds, aqueous veſicles, miliary puſtules, petechiæ, and vibrices, &c. appear, eſpecially towards the hypochondria. The abdomen is diſtended and depreſſed.

External ſuppurations have often been followed by a cure. When the preſſure of the epigaſtrium decreaſes, when the urine flows freely, and when the ſtrength is recruited by ſleep, there is reaſon to hope for a favourable termination.

But, if deglutition becomes difficult, and the tongue dry and black; if the abdomen remains diſtended, with a retraction or convexity of its ſides; if hiccup takes place, with gangrenous ſpots on the legs or feet, and black aphthæ in the mouth; if the patient experiences frequent ſyncope, general dejection, coldneſs of the limbs, with internal heat, ſtupor, and ſlight delirium; in a word, if the ſtools are involuntary, and if the pains ſuddenly ceaſe, the patient will ſoon die. On opening

ing the body, traces of gangrene are often found in the œsophagus, the colon, and the rectum.

In certain cases, the disease assumes a more or less striking character of enteritis; as was the case in the epidemia which occasioned so much ravage in the environs of Nancy in 1734, and of which Marquet collected the history. This variety was characterized by a violent pain in the stomach and intestines, accompanied with extreme sensibility of the abdomen, which could not endure the slightest touch. The patient experienced universal heat, insatiable thirst, a burning heat from the throat to the anus; the tongue was red, dry, and sometimes blackish towards the root; the pulse hard and accelerated; the stools were frequent, in small quantity, and accompanied with excessive straining: vomiting in almost every case proved fatal: some of the patients were carried off five or six hours after the first attack. It will excite no astonishment that the disease should have been so destructive, when it is known that the only remedies employed were ipecacuanha, rhubarb, and diascordium.

In almost all the secases of epidemic dysentery, the fever is not very apparent: weakness and dejection are extreme after the attack. In general, the disease is the less dangerous as the symptoms of reaction are more striking.

The

The ſkin is almoſt always dry, dirty, and as it were ſcaly; the tongue is of a red colour, more or leſs bright: ſometimes ſmall ulcerations take place in the mouth, and the irritation extends to the whole alimentary canal.

The red colour of the ſtools is the conſequence of a ſanguinolent exudation from the ſerous veſſels, into which the blood is impelled by the phlegmaſic turgeſcence: it is not obſerved that the diſeaſe is milder when this bloody exudation does not take place.

Sometimes the fæcal matters are conſtantly mucous; and towards the end aſſume a puriform opacity, as in the caſe of coryza, colds, &c. The filaments, pellicles, or membranous fragments, frequently obſerved in the ſtools, are the reſult of an albumino-gelatinous exudation, which has aſſumed a concrete form in the inteſtinal canal. It is very rarely that theſe portions of the epidermis ſeparate from the mucous membrane.

The fæcal matters always exhale a peculiar faint odour, which at the commencement is not very diſagreeable; but towards the concluſion they become inſupportably acrid and fetid.

Like all catarrhal affections, the one in queſtion, when it attains to its third period, continues ſometimes very long, and teneſmus with ſome pains in the bowels then remains. It ſometimes

times happens that the evacuations continue to be frequent and liquid, after all the other ſymptoms have diſappeared; the diarrhœa is perpetuated by atonia of the digeſtive ſyſtem, and by a ſort of habit; and the patient, at the end of a ſhorter or longer time, dies of conſumption.

46. If we compare the reſults furniſhed by numerous obſervations of dyſentery, this diſeaſe may be diſtinguiſhed into five principal forms:

1ſt. The ſimpleſt rarely occurs: it is however ſometimes obſerved, and follows very exactly the three periods of catarrhal affections. *Firſt period:* conſtriction of the anus, orgaſm in the inteſtinal mucous membrane, frequent deſire to go to ſtool, and at the ſame time coſtiveneſs. *Second period:* relaxation, excretion with a gradual diminution of the ſymptoms. *Third period:* ceſſation of the pain in the bowels, milder and thicker evacuations. *Simple dyſentery.*

2d. The ſecond announces itſelf by bitterneſs in the mouth, vomiting, pain in the epigaſtrium, and ſhivering followed by a violent univerſal heat; the pulſe is accelerated and ſtrong; the cephalalgia exceedingly painful, and the face red. The progreſs of this variety, in general, is more rapid and more acute. *Bilious dyſentery.*

3d. In the third, the preliminary ſymptoms are often

often very slight, and exhibit a catarrhal character and dispositions; the face is of a rosy white colour; the mouth and throat are filled with mucous matter, and in some parts excoriated; the epigastrium is sensible, and distended with flatulencies: the progress of the symptoms is exceedingly slow; they remain a long time stationary; the patient seems rather indolent than really exhausted. *Mucous dysentery of Wagler.*

4th. The fourth is characterized by very acute pains and excessive sensibility in the abdomen. The patient experiences great heat; the pulse is frequent and hard, accompanied with pain in the head, redness of the face and eyes. The severity of the symptoms is increased by vomiting exceedingly painful. *Dysentery with symptoms of enteritis.*

5th. The fifth takes place when patients are crowded together in confined places, badly aired, damp, dark, and dirty; and particularly among old persons, or individuals exhausted by fatigue, poverty, and grief. It announces itself with a sudden and extraordinary weakness, a painful constriction of the epigastrium, and great heaviness of the head. The eyes have a haggard and cadaverous appearance; the voice becomes weak; the patient is much dejected, and experiences frequent syncope; eruptions appear on the skin. It is highly

highly contagious. *Malignant dyſentery of Zimmermann and Pringle.*

47. Theſe are the principal forms and eſſential characters aſſumed by inteſtinal catarrh, eſpecially when epidemic. It is then always produced by a concurrence of circumſtances, which tend to weaken the general nervous action: ſuch as humidity of the atmoſphere after a long continuance of exceſſive heat; great fatigue; food of a bad quality or inſufficient in quantity; extreme grief. It is produced, in particular, by individuals being crowded together in confined, dirty places, amidſt want of every kind. It is then chiefly that it becomes contagious; it acquires this quality in conſequence of the miaſmata exhaled from theſe bodies enfeebled by wretchedneſs and diſeaſe. Theſe miaſmata, conveyed to the nerves of the aërian paſſages with the inſpired air, may ſecond the general cauſes of dyſentery, or determine the diſeaſe directly by a mode of action analogous to that of contagious virus.

In this diſeaſe, the alimentary ſubſtances, not ſufficiently influenced by the digeſtive action of the alimentary canal, which is too much weakened, putrefy, as they do in every other warm and moiſt place; a diſengagement of different gaſes then takes place, and the ſtools are exceedingly fetid.

48. In

48. In the courſe of almoſt all the phlegmaſiæ of the mucous, aërian, or alimentary membranes, there ſometimes ariſe in them ſmall puſtules, or round ſuperficial ulcers (aphthæ), of a whitiſh or an aſh colour, as large as a grain of millet or hemp-ſeed, and having in the middle an aperture, which ſeems to be the orifice of the excretory duct of a mucous follicle. At firſt, when viewed with a magnifying glaſs, the circumference of them appears red and inflamed. A pellicle, which no doubt is the mucous membrane of the epidermis, gradualy detaches itſelf in ſcales; the excoriated ſurface is then exceedingly ſenſible, and cannot bear the contact of any hard body. This epidermis, in general, is ſpeedily renewed.

Sometimes theſe aphthæ appear inſulated and diſperſed in different parts; on the velum palati, over the whole extent of the mouth, the tongue, the guns, the interior ſurface of the lips, the bottom ofthe mouth, the œſophagus, &c.; reſpiration and deglutition are then exceedingly painful. Some of theſe aphthæ have been found, after death, in every part of the alimentary canal. Katelaer, at the time when theſe pellicles dropped off, obſerved that ſeveral patients voided large quantities of them by themouth and the anus.

At other times, theſe puſtules are cloſer, and run into each other, ſo as to form a ſort of white, ſhining,

ſhining, denſe and adherent cruſt, extending from the mouth to the pharynx and the œſophagus. They are ſometimes of a yellow colour, or even entirely black.

This affection, firſt obſerved with great attention by Katelaer, who practiſed in Zealand, has been deſcribed alſo by Boerhaave; and was afterwards obſerved, in Holland, by Vanſwieten, who never ſaw it at Vienna.

The aphthæ rarely conſtitute an eſſential malady; for the moſt part they accompany catarrhal affections and malignant fevers. The mucous fevers, obſerved by Wagler, often exhibit towards the end an aphtheous eruption, with an abundant ſalivation.

The aphthæ generally make their appearance in damp, marſhy places, where the houſes are dirty and badly aired; and on indigent perſons, or thoſe who are of a weak, delicate conſtitution. They are often obſerved in hoſpitals for children, where the atmoſphere is ſpeedily infected by the leaſt negligence in regard to cleanlineſs, and where bad nouriſhment diſpoſes to great debility. In the hoſpital founded by Mr. Necker at Vaugirard for artificial ſuckling, of nearly eighty children, on whom every poſſible care was beſtowed, twenty-two died with miliary eruptions. In the Foundling Hoſpital at Paris, this affection has often been ſeen to occaſion great ravage, under the name of *muguet*, and to ſpread rapidly from

the

the diſeaſed child to thoſe lying under the ſame curtains.

49. *Catarrhs of the genito-urinary paſſages.* The mucous membranes of the urethra, the vulva, and the vagina, are often attacked by a mode of irritation, the reſults of which are perfectly analogous to the catarrhal affections already mentioned. When theſe maladies are not checked in their progreſs, by an empiric treatment, they are obſerved to follow, in a regular manner, the three ſtages of catarrhs, and then to diſappear ſpontaneouſly.

The moſt common cauſe of theſe diſeaſes is the local application of a ſpecific irritant; and this application is produced, for the moſt part, by coition with a perſon actually affected by the ſame diſeaſe. Its attack is manifeſted in a period of time which varies from a few hours to fifteen days, and ſometimes more. This affection, in the male, is announced by a ſlight titillation at the extremity of the urethra, with redneſs, ſwelling, pain more or leſs acute, burning heat during the paſſage of the urine. At the end of three or four days there appears an exudation of a ſerous matter, more or leſs acrid. The ſeat of the irritation is towards the foſſa navicularis, or in ſome points of the canal, a little more elevated. From the ſeventh to the tenth day the running becomes more abundant, yellow or greeniſh; the irritation is propagated along the urethra, towards the frænum of

the penis, and even towards the neck of the bladder; the patient experiences a ſenſation of conſtriction, and a very frequent deſire with difficulty or impoſſibility of making water. The running is then very abundant, thicker, and leſs irritating; and the ſymptoms gradually abate. At length the excretion becomes, ſucceſſively, more opake, decreaſes in quantity, and completely diſappears towards the thirty-fifth or fortieth day.

In females, the diſeaſe announces itſelf by an irritation, which at firſt is ſlight, or a ſort of diſagreeable itching in the vagina followed by an acute pain, with a conſtriction in the whole of that part; the irritation is then ſpread over the whole vulva, and along the urethra, with a troubleſome heat in making water; a ſecretion gradually takes place from the ſides of the vulvo-uterine conduit, and the diſeaſe then follows the ſame changes as in man.

Catarrh of the genito-urinary paſſages is often accompanied with ſymptoms highly varied, which depend on the peculiar degree of irritation, and on its propagation to the neighbouring parts.

The irritation is often communicated to the cavernous bodies; and the penis then ſwells, is bent in different directions, and becomes very painful on the ſlighteſt touch. Sometimes a painful erection, which continues ſo long as to produce ſpon-

taneouſly the reſult of venereal orgaſm, comes on in the night.

In ſome caſes, the irritation is propagated to the inguinal glands, to the proſtate, or to the teſticles; eſpecially when theſe organs are weakened or fatigued: they then experience the uſual courſe of phlegmonous affections. If the irritation determined to theſe parts be exceedingly ſtrong or ſudden, the excretion of the mucous membrane takes place with difficulty, or is ſpeedily ſuſpended; which has induced ſome to believe in a metaſtaſis of the excreted *humour*, which is ſuppoſed to *proceed* to the glands of the groin, to *fix* itſelf in the proſtate gland, or to *fall* into the *ſcrotum*, &c.: but theſe phænomena may be explained by conſidering them as the reſult of a very violent irritation, which removes a weaker.

It is not uncommon to ſee the running continue a very long time, and to perpetuate itſelf with the indolent character of chronic catarrhs. In this caſe, it is obſerved, that the affection has not been violent in its firſt ſtate, and at the commencement of the ſecond period; that the conſtitution has been too much weakened by bleeding, aqueous beverages, &c. or that the individual has before experienced the ſame diſeaſe ſeveral times. It is therefore almoſt always proper, in the third period, to recur to the uſe of tonics, ſuch as the cold bath,

bath, ſtimulating injections, purgatives, a veſicatory, &c. Theſe means often ſucceed, by deranging the habitual mode of action in the affected part.

When the urethral or vulvo-uterine excretion has paſſed through all its periods, and has been perpetuated by atonia of the parts, or by the force of habit, it may be obſerved that it loſes its ſpecific, irritant character, and rarely communicates the malady.

Sometimes this affection leaves behind it an induration of the ſides of the urethra, with a conſtriction of the canal; or produces different fungoſities.

The urethral catarrh *(blennorrhagia)* is produced, for the moſt part, by the immediate contact of the matter excreted from a perſon affected by the ſame diſeaſe. This blennorrhagia, called the ſyphilitic, laſts much longer than thoſe which may come on ſpontaneouſly, which are excited by irritating injections, and which commonly terminate in the courſe of eight days *.

When a ſyphilitic blennorrhagia commences, it may be ſpeedily eradicated by employing ſtrong and continued injections to produce a *ſimple* blennorrhagia, which prevents the ſyphilitic from developing itſelf. This method I have always

* The reader may ſee, in Swediaur's Treatiſe on the Venereal Diſeaſe, a very curious hiſtory of an urethral catarrh, which he produced on himſelf by the injection of diluted ammoniac.

found ſucceſsful, when I was able to employ it at a proper time and in a proper manner.

It does not appear that ſyphilitic blennorrhagia ever gives riſe to ſymptoms of the pox; nor is it proved that contact of the matter produced by its ſecretion can occaſion the formation of a chancre. It may, however, be readily conceived that the acrid and highly ſtimulating matter of a chancre, conveyed to the urethral canal, may, like every ſpecific irritant, produce in that part a catarrh; but in general it produces only a chancre.

50. A mucous running from the genito-urinary paſſages has been obſerved in children of both ſexes, at the time of dentition. At that period an irritation almoſt always takes place in the mucous membrane of the whole digeſtive ſyſtem, which is announced by an abundant ſalivation and by diarrhœa.

In the epidemia obſerved at *Graefenthal*, the dyſentery diſappeared in December 1797, and was ſucceeded by catarrhal and rheumatic affections. At the ſame time ſeveral married men, and men come to years of maturity, experienced a diſagreeable tickling in the glans, with painful erections, a frequent deſire to make water, and a great difficulty of voiding it. The urine depoſited a white, viſcid, flaky, filamentous ſediment. Some days after a running of a yellow, ſlimy, and tenacious matter took

took place from the urinary paſſage. The ſymptoms then gradually decreaſed, and in ſome days diſappeared. The ſame diſeaſe was obſerved among the female ſex, and in the mountains, where the venereal diſeaſe is exceedingly rare.

Several inſtances induce me to believe, with Hunter, that a conſtitutional leucorrhœa may, by coition, produce in man a ſimple blennorrhagia.

51. *Catarrh of the bladder* is a ſimple and very common diſeaſe, which however is not yet well known. It is particularly incident to men of letters, perſons who are confined in offices, or ſedentary old men. Buffon, Voltaire, Rouſſeau, Dalembert, &c. were affected by it. Very often it is produced and maintained by the preſence of a calculus or other foreign body. Sometimes, however, it exiſts without this cauſe; and in certain caſes it ſeems to be connected with ſome old cutaneous affections. It has never been remarked but in the chronic ſtate. This affection is attended with an habitual ſenſibility towards the hypogaſtrium, which can ſcarcely bear to be touched; pains more or leſs acute, in irregular paroxyſms, with a difficulty and ſometimes impoſſibility of voiding urine: the urine is habitually thick and ſlimy, and by reſt depoſits a ſlimy ſediment. Mucilaginous ſubſtances, diuretic ſtimulants, the uſe of ſulphureous or acidulous mineral waters, produce only a

momentary alleviation; and the diſeaſe, which is commonly of long duration, almoſt always terminates in death.

It is to the irritation maintained by theſe chronic catarrhs that we ought, no doubt, to aſcribe the different alterations found after death in the ſides of the bladder.

52. *Uterine catarrh.* Many females are ſubject to a running from the vulvo-uterine canal. It is obſerved ſometimes towards the age of puberty, in girls of a ſtrong make, who eat a great deal without taking proper exerciſe; who are ſtrongly ſtimulated by venereal deſires; in young widows, nuns, &c. It ſeems to ſucceed an irritation of the genital parts, or the abuſe of venereal pleaſures. It comes on after laborious parturition, abortion, ceſſation of the menſtrual flux, &c. In theſe caſes, the patients complain ſometimes of conſiderable heat in the region of the uterus, and of pain towards the loins. The affection ſeems then to be purely local, and to ariſe from an irritation of the mucous membrane of the uterus.

But, for the moſt part, this running is obſerved in women pale, dejected, and indifferent to venereal pleaſures; in a ſtate of habitual languor and anorexia, weakened by exceſſive menſtruations, long continued grief, and other debilitating affections.

The

The matter, which at the commencement is mild, limpid, and in ſmall quantity, occaſions, at firſt, no inconvenience in general. The running appears only a little before and immediately after each menſtrual period; in the courſe of time it increaſes both with reſpect to quantity and duration; the bloody evacuation decreaſes, in general, in the ſame proportion; and if menſtruation ceaſes, it returns at times the periodicity of which is pretty regular. The general debility then increaſes, and pains take place towards the lumbar region; the matter afterwards exhibits different degrees of conſiſtence, and ſhades of colour highly varied: it often inſtantaneouſly aſſumes ſuch a character of acridity, that in coition it ſeems ſometimes to have produced in man a ſimple blennorrhagia.

The diſeaſe ſometimes remains in the ſame ſtate during a great number of years, and, if the conſtitution happens to improve, ſpontaneouſly diſappears. At other times it aſſumes a more ſerious character. The patients then complain of a ſenſation of eroſion in the uterus or the vagina; they experience heat in voiding urine, and the irritation, long fixed in the interior tunic of the uterus, is often propagated throughout the whole ſubſtance of that organ, or even to thoſe connected with it. Theſe parts then acquire ſuch a degree of ſenſibility that all the phyſical ſenſations and moral affections ſeem to be directed to them as to a common centre. In

certain caſes, acute ſhooting pains come on, accompanied with inſupportable pricking and heat towards the region of the uterus; the ſkin is habitually dry and ſcorching; the pulſe is ſmall and confined; a general decay then gradually takes place; ſometimes palpitation and frequent ſyncopes are obſerved; the intellectual functions become weak; the patient experiences the moſt violent emotions from the ſlighteſt cauſes, and exhibits a combination of all the common hyſterical ſymptoms. The appetite and ſleep are at length loſt; diarrhœa, ſwelling of the limbs, &c. come on; and this ſeries of ſufferings and miſeries is ſoon terminated by death.

On opening the body a certain degree of thickening is obſerved in ſome parts of the tunics of the uterus; a ſwelling more or leſs hard of the ovaria, ulcerations in theſe organs, &c.

It may readily be conceived that this affection is for the moſt part combined, either as a cauſe or an effect, with a general derangement of the nervous ſyſtem, and a ſort of univerſal debility. This diſeaſe has been ſometimes cured, even in a very advanced ſtate, by great changes effected in the organization; by an amelioration or reverſe of fortune; by ſtrong mental affections long continued; by agricultural occupations, and coarſe nouriſhment, ſucceeding opulence, indolence, &c.

53. *General*

53. *General characters of catarrhal affections.* All the catarrhal affections, the particular hiſtories of which we have here given, exhibit general phænomena, which evidently indicate that they are affections of the ſame order. Hence the individual or other circumſtances which ſeem to concur to their development are the ſame. Under theſe circumſtances the diſeaſe ſeems, in ſome meaſure, to affect the whole mucous ſyſtem; and it then exhibits varied forms, according to the part in which the irritation has its particular ſeat.

The parts of the mucous ſyſtem which are moſt directly ſubject to atmoſpheric impreſſions, are thoſe in particular which are attacked by epidemical catarrhs; ſuch as the air paſſages, and next the alimentary canal.

The genito-urinary paſſages, leſs expoſed to the direct influence of the atmoſphere, are more ſubject to chronic catarrhs.

In ſome epidemiæ theſe affections occupy ſimultaneouſly, or in ſucceſſion, the whole extent of the mucous ſyſtem. The diſeaſe always obſerves a regular progreſs, in which three ſtages are diſtinguiſhed: one of particular orgaſm; another of ſecretion increaſed and changed; and the laſt of a gradual return to the natural ſtate. The time in which the diſeaſe paſſes through theſe ſtages is exceedingly variable.

All catarrhal affections which continue, produce

duce the ſame ſtate of general decay, and give riſe to organic alterations of the ſame order: hence the parts affected exhibit, after death, ſwellings with induration, excreſcences of different kinds, ulcerations, &c.

Sometimes theſe affections ſeem to be merely local; but, for the moſt part, their reaction on the whole ſyſtem produces, at leaſt during the firſt and a part of the ſecond ſtage, a general ſenſation of laſſitude, and heavineſs in the head; towards evening, ſhivering, followed by a very diſagreeable heat over the whole body, with thirſt, and redneſs of the face; the pulſe is moderately frequent, ſleep is diſturbed, and the appetite is weakened; petechial, miliary, &c. eruptions very often appear during the catarrhal fever; the febrile excitement commonly abates in the morning to re-appear in the evening and during the night, until the local irritation has ſenſibly decreaſed. In chronic catarrhs, the diſeaſe ſeems to be maintained by general debility of the whole ſyſtem, and by the force of habit: it is aggravated by the exceſſive excretion which is the conſequence of it.

In a word, all catarrhal affections exhibit numerous varieties, which depend on the peculiar ſtate of the individual, and, in particular, on the character of the exiſting epidemic conſtitution. Every catarrh tends of itſelf to a favourable termination; and the cure is always certain when nothing

thing intervenes to derange its progreſs; but the caſe is very different if the habitual or accidental conſtitution of the patient makes it aſſume the appearance of mucous, bilious, or adynamic fever; and eſpecially if it takes place during the prevalence of malignant diſeaſes; for the catarrh rarely fails to participate in their character. This is evidently obſerved in the anginæ, in pulmonary catarrh, in dyſentery, &c. Theſe affections are always ſimple and mild when the reigning diſeaſes tend alſo to a ſpeedy and favourable termination, unleſs the individual, weak and exhauſted, finds himſelf in a real ſtate of adynamia before he is attacked.

The treatment of ſimple catarrhs muſt be regulated according to the different ſtages: hence mucilaginous draughts ought to be employed in the commencement; means ſlightly ſtimulant and aromatic towards the end; with every thing that can contribute to maintain the energy of the part affected, and to make it ſpeedily reſume its natural mode of action. But if the catarrh aſſume a bad character, it induces the neceſſity of employing means almoſt always energetic, and which muſt be ſpecially regulated according to a knowledge of the prevailing epidemia, and an attentive examination of the ſtate of the patient's ſtrength.

PHLEG-

PHLEGMASIÆ OF THE WHITE FIBROUS MEMBRANES.

54. We now proceed to examine another order of diſeaſes which ſeem to have a great relation to the preceding. Theſe diſeaſes take place under the ſame circumſtances; they appear in ſpring and in autumn, and particularly during damp weather with ſudden alternations of heat and cold. They are almoſt always endemial, in certain marſhy countries, habitually damp or covered with fogs, as is the caſe in ſome parts of England. Thoſe who remain a ſhort time at reſt, expoſed to the damp, cold night air, in ſome of the maritime countries, ſcorched during the day by the heat of the ſun, are almoſt ſure of being attacked by them. Robuſt people, from the age of fourteen to thirty-five, accuſtomed to ſevere labour, and who live well, are particularly ſubject to theſe affections.

They are announced by ſhivering or tremor, ſoon after followed by heat and agitation; pulſe hard and accelerated, &c. Theſe febrile ſymptoms generally increaſe towards the evening, and abate or even diſappear entirely in the courſe of the day. In a day or two, and ſometimes ſooner, the patient without any previous febrile ſymptoms experiences a ſevere burning, lacerating pain in ſome

ſome parts of the body, particularly towards the articulations, in the wriſts, the ſhoulders, and the knees. This pain ſhoots along the tendons, the aponeuroſes, the membranous capſules, and the muſcles: it becomes exceſſive on the leaſt attempt to perform any motion, on the ſlighteſt external touch, and yet to the eye exhibits no alteration; but the part ſoon ſwells, becomes diſtended and of a ſhining red colour, after which the pains gradually decreaſe. The affection ſeldom confines its attack to one place. After a longer or ſhorter time, it generally re-appears in ſome very diſtant part, and renews the ſame ſufferings: it has been ſeen to paſs through all the articulations in this manner, ſometimes confining itſelf to one ſide, and at each ſtation employing a period which varies from twelve and twenty-four hours to eight or ten days. Sometimes it returns to parts already affected; at other times it attacks almoſt all the articulations at the ſame time, ſo that the whole body remains ſtiff and rigid, as if formed of one piece, ſubject to violent pain on the leaſt motion. The fever goes on increaſing for ſome days like the local ſymptoms, and proceeds by paroxyſms, with evident remiſſions or even complete intermiſſions. It is almoſt always accompanied by alterations, more or leſs ſtriking, in the different functions. At the end of an indeterminate number of days, the remiſſions generally bring on moderate ſweats, which

which afford little relief; very often eruptions of the ſkin take place, as in febrile catarrhs: the exacerbations, however, gradually decreaſe as well as the pains; the patient begins to ſleep a little in the night; the urine, highly coloured at firſt, depoſits a lateritious ſediment: the fever commonly ceaſes on the fifteenth or twenty-fifth day; or, if it returns, exhibits only ſlight or tranſient, and irregular paroxyſms; but the local ſymptoms, though much moderated, ſtill exiſt, and ſometimes very long, but with a character of leſs mobility.

Such is the progreſs, in general, of acute rheumatiſm. But no affection perhaps is diverſified with ſo many varied ſhades; for the intenſity of the fever exhibits gradations which continue till it entirely ceaſes. The duration of the malady is circumſcribed between a few days or a few months, without the febrile paroxyſms however extending much beyond fifteen or twenty days. Sometimes the mobility of the local irritation is very great; at other times it never ſhifts till towards the end of from ſeven to ten days, and ſometimes it is confined to only one part. When the affection attacks the articulations of the limbs, the latter circumſtance is rare.

Rheumatic affections ſeem to have the power alſo of attacking the fibrous organs, covered with mucous membranes, and of combining or coming on alternately with catarrhal affections. The

rheumatiſm then exhibits remarkable varieties, according to the parts which it attacks.

When it reaches the ears the pains are lacerating and intolerable. In this caſe the affection ſeems to have its ſeat along the mucous membrane, which from the inſide of the ear proceeds through the guttural conduit as far as the back part of the mouth. This diſeaſe exhibits evident characters of rheumatiſm by its great mobility; its ceſſation and ſudden returns; its property of ſhifting itſelf, and of attacking different parts in ſucceſſion, &c. *Otalgia.*

Odontalgia and angina often exhibit the rheumatic character. The angina, in this caſe, has its ſeat in particular in the muſcular ſyſtem of the larynx: hence the pain is increaſed by deglutition, ſpeaking, &c.; and yet reſpiration remains pretty free.

Rheumatic pleuriſy is very common in thoſe atmoſpheric conſtitutions which produce catarrhal affections. It commences its attack without ſhivering, or with a conſtant and ſlight ſenſation of cold. A pungent pain comes on ſpeedily in the ſide, rarely fixed and confined to one point, but extending itſelf between the ſhoulders, or over one whole ſide of the thorax, from which it is propagated along the hypochondria and the epigaſtrium. It frequently ſhifts from one place to another; the ſeat of the pain is in the external parts, and

and the point affected can neither bear to be touched, nor endure the weight of the body; reſpiration is little confined, and the oppreſſion is ſlight. Symptoms of catarrhal affections often take place, ſuch as cough, a mucous and ſometimes bloody expectoration, &c.

The ſtomach, the inteſtines, the bladder, the uterus, &c. ſeem to be equally ſuſceptible of rheumatic affection. Theſe organs indeed, in their anatomical ſtructure, exhibit white fibrous tiſſues favourable to this kind of affection. They are all compoſed of a muſcular and aponeurotic layer, lined by a mucous membrane, and covered externally by a ſerous membrane.

The rheumatiſm then ſeems to have its ſeat, at leaſt in a ſpecial manner, in the white fibrous tiſſues; ſuch as the articular capſules, the ligaments, the aponeuroſes, the tendons, the tendinous vaginæ, the periofteum, &c. There is great abundance of theſe parts around the articulations; they are continued between the muſcles, and ſerve to account for the ſevere pains which are experienced in moving.

The principal irritation is conſtantly eſtabliſhed in a part which is eſſentially formed of white fibrous membranes. It always announces itſelf by a very acute ſenſe of laceration and diſtenſion. Stoll obſerved, at the ſame time, and in different patients, megrim or cephalalgia on one ſide only;

pains

pains in the ears and teeth; anginæ, rheumatic pleurifies, general rheumatifms. The laft often ran through all the articulations, fhifting with the rapidity of lightning.

The fwelling and redneſs do not always exift, the congeftion formed is, for the moft part, diffipated flowly by fucceffive fweats. At that period a naſal, hæmorrhoidal, uterine, &c. hæmorrhagy is ſometimes obſerved. In the part affected there frequently remains a weakneſs, or ſort of palſy, which can be removed only by time and exerciſe.

After the febrile ſymptoms have ceaſed, the pain and fwelling ſometimes fix themſelves in one articulation, and particularly in that which has been moſt affected. This circumſtance is obſerved, in particular, when the diſeaſe ſeems to have been continued by the too long uſe of debilitants; by emollient topics, by the application and continuance of a veficatory on the affected articulation, &c. The fwelling then exiſts without redneſs, or pain when in the ſtate of reſt. The part fallen into a ſort of atonia ſeems incapable of effecting a reſorption of the accumulated fluids, and becomes the centre of a ſlight irritation, which continually promotes a new congeftion. In this caſe, the uſe of ſtimulating tonics, ſuch as dry, aromatic, ammoniacal, &c. friction, is attended with ſtriking ſucceſs.

But if the diſeaſe continues to make progreſs,

the articulation becomes exceedingly voluminous, hard, diſtended, and indolent. At the end of a certain period, in general very long, ſymptoms ſimilar to thoſe of phlegmon take place in one or more points; heat, acute and ſhooting pain, with ſome febrile ſymptoms. The ſkin gradually aſſumes a blueiſh or violet colour; its tiſſue becomes thin, and by rupture it ſuffers to eſcape a ſerous, ſanious, turbid liquor of different colours.

The patient, inceſſantly tormented by local pains, ſoon loſes his appetite; complains of thirſt and continual heat; his pulſe becomes frequent and weak; and a diarrhœa brings on a rapid decay, and at length death.

On opening the body, all the parts of the articulation, altered in their tiſſue, exhibit a maſs the conſiſtence of which varies from that of lard to the conſiſtence of cartilage; collections of gelatinous matter are ſometimes obſerved in the interſtices between the ſolid parts, and often ſanious, browniſh liquids, ſimilar to that which has been evacuated. Sometimes the bones appear as if pounded, and reduced to fragments, amidſt a liquid or pulp of different colours. When it has been poſſible to examine theſe parts much ſooner, either after the death of the patient or the amputation of the limb, it has been ſeen that the ſwelling aroſe ſometimes from the effuſion of a mucoſo-gelatinous matter between the aponeurotic laminæ,

in

in the tendinous capſules, &c.; ſometimes from an inſpiſſation of all the white parts, which had aſſumed the conſiſtence of ſoft cartilage, &c. Theſe parts were ſometimes ſeparate and diſtinct, or united into one maſs, &c.

Theſe white and indolent tumours, which are moſt common in the knees, are not always the conſequences of rheumatiſm; they often take place after violent contuſions of the articulations: but thoſe who analyſe the ſeries of phænomena which come on, will ſoon perceive a phlegmonous irritation developed in the cellular tiſſue of the ſkin, and a rheumatic irritation in the ſubjacent fibrous tiſſues. Very often a ſpeedy reſolution of the phlegmon is effected; but the albumino-gelatinous congeſtion goes on gradually increaſing in the white fibrous tiſſues, and the affection then enters exactly into the caſe of the preceding.

Dr. Kirkland obſerved one kind of rheumatiſm which exhibits a peculiar mode of termination; it comes on after an impreſſion from cold, and announces itſelf by a ſlight ſhivering, a continued fever, and profound pains in different parts of the body.

Sometimes an eryſipelatous efflorescence appears on the parts profoundly affected, with a ſlight ſwelling, and impotence of the affected limb, without very ſevere pain when touched: the fever and efflorescence gradually diſappear.

At the end of ſome weeks, however, congeſtions not very prominent, which manifeſt themſelves to the touch by a ſort of fluctuation, take place, and on being opened diſcharge a ſmall quantity of a lymphatic fluid. Several congeſtions of the like kind are formed in other parts, and always above or below ſome of the ligamentous or muſcular membranes. The patient, after a period which is ſometimes very long, dies exhauſted and of maraſmus. Kirkland, however, ſometimes ſaw the ulcers cicatrize, and a cure to be effected, when the number of the congeſtions was not very conſiderable; but the diſeaſe was always exceedingly tedious.

The *beriberia* of Bontius, and the ſtrokes of the moon, mentioned by Dupont, ſeem to have a great analogy to *acute rheumatiſm*.

55. A ſtriking analogy here brings to our recollection the hiſtory of an affection, generally habitual, and always regularly intermittent, which ſometimes ſucceeds one or more attacks of the rheumatiſm; which, in certain caſes, is evidently produced by the alteration of ſome part, and which in others cannot, as appears, be referred to any appreciable cauſe.

This affection announces itſelf by pains, ſometimes acute and lacerating, in ſome of the articular regions, ſuch as the wriſts, the ſhoulders, the back,

back, the knees, and the loins. It ſhows itſelf ſometimes in one part and ſometimes in another, or always re-appears in the ſame place. It manifeſts itſelf chiefly during cold, damp, gloomy weather accompanied by a weſt wind. Sometimes it comes on regularly every evening, or during the night, and diſappears when the ſtate of the atmoſphere occaſions great heat and drought: it is conſtantly leſs violent in the day-time. The pain always has its ſeat in the parts abundantly provided with white fibrous organs; in ſeveral caſes it appears to be fixed in the tunic of a trunk or of the branch of a nerve, from which it is often propagated to the extremity of the nervous ramifications, paſſing over them ſimultaneouſly or in ſucceſſion, and ſometimes with the rapidity of lightning*. Each paroxyſm of this affection often begins by a ſenſation of torpor or pricking, which ſoon produces ſhooting or twitching; and is itſelf compoſed of ſmall and very ſhort paroxyſms, which rapidly ſucceed each other, without much apparent redneſs, heat, or ſwelling in the part. The pulſe, in general, exhibits no remarkable alteration. The local irritation, however, ſometimes produces ſhivering, convulſive agitations, automatic movements which degenerate into habit. A momentary ſwelling of the veins; a ſtronger and more frequent pulſation in the arteries of the

* See the *Tableau des Neuralgies* of C. Chauffier.

part; a change in its habitual ſecretion, are obſerved; and if the paroxyſms are prolonged or are frequently repeated, they bring on a perceptible diminution in the volume of the affected part, either by the want of nutritive ſecretion or the diminution of exerciſe.

This diſeaſe, which of itſelf never proves mortal, is very troubleſome by the intenſity of the pains, their obſtinacy in certain caſes, and the frequency of their return. But, if the paroxyſms are pretty long, or often repeated, interruption of ſleep, loſs of appetite, derangement in the functions of digeſtion, of ſecretion, &c. ſometimes bring on atrophia, hemiplegia, a flabby ſwelling of the inferior limbs, univerſal extenuation, and at laſt death. *Chronic rheumatiſm.*

In an affection which may ariſe from cauſes ſo varied, and often unknown, it is impoſſible to ſay any thing certain with reſpect to the means of cure. But as this diſeaſe proceeds for the moſt part from habitual weakneſs, and from a ſort of exalted irritability, the phyſician in general ought to depend moſt on the means proper for ſtrengthening either the affected part or the whole ſyſtem, and for ſuſpending the excitability by producing an irritation of another kind in the ſame part, or in ſome other which correſponds with it ſympathetically.

56. There is ſtill another diſeaſe, which in a great

great many points of view approaches the preceding, but which differs eſſentially from it in its general progreſs. Like the rheumatiſm, it appears to have its ſpecial ſeat in the parts provided with fibrous tiſſues: in its courſe it exhibits very extraordinary peculiarities; and on this account its cauſes and nature are ſtill little known. A hiſtory of it may be ſeen in the works of Cullen, who has traced it out with that truth and preciſion which are found in all his deſcriptions. This diſeaſe commences by paroxyſms, and for the moſt part attacks the feet: it frequently announces itſelf by wandering pains, repeated cramp, and a ſort of numbneſs or ſhivering in the legs. It is often preceded, for ſome time, by a general indiſpoſition, loſs of appetite, loathing, and a pain in the epigaſtrium. Sometimes the paroxyſms ſuddenly manifeſt themſelves without any previous ſymptoms.

If the patient has experienced any gaſtric derangement, he is commonly ſeized, all of a ſudden, with an extraordinary appetite during the day, and in the evening or middle of the night with a violent ſhivering; ſoon after which he experiences a pain in the foot, frequently in the articulation of the firſt phalanx of the great toe. In proportion as the pain increaſes the ſhivering abates, and is ſoon ſucceeded by an ardent heat.

The pain and fever continue in this manner, with repeated exacerbation, until the following

night. At this period the ſymptoms gradually decreaſe; a gentle and univerſal ſweat comes on, and the patient can enjoy a little ſleep.

In the morning after the ſecond night, the part affected appears to be ſlightly ſwelled and red, and becomes painful when touched or during motion. Theſe ſymptoms continue for ſeveral days. The patient every evening, and often during the whole night, experiences an exacerbation of the pains and fever. This ſeries of phænomena then gradually decreaſes; the ſwelling and pain ſubſide; the fever ceaſes; and at the end of four or five days the patient finds himſelf in a ſtate of perfect health, and feels nothing of the general indiſpoſition which preceded the diſeaſe. Such is the moſt *regular* progreſs of a fit of the *gout*.

The firſt fits of the gout are generally very ſhort, and do not return for ſeveral years; but in proportion as they increaſe in number it is obſerved that their intermiſſions become ſhorter: they appear every ſpring with pains more acute and of longer duration; and they thus continue to come on more frequently, ſo as to attack the patient ſeveral times in the ſame ſeaſon; the paroxyſms then begin to be more violent, and continue longer. At length the patient is ſubject to almoſt continual torture, and experiences no material relief from his ſufferings but during part of the ſummer and autumn.

When the fits have thus become very frequent, they

they exhibit great variety in their progreſs. The gout, which at firſt attacked only one foot, attacks both, either ſimultaneouſly or alternately. Sometimes the part already affected becomes ſo again. The diſeaſe often ceaſes in the feet, and ſuddenly makes its appearance in the hands, where it exhibits the ſame ſeries of phænomena: when of long ſtanding, it will be found to have ſucceſſively affected almoſt all the ſmall articulations of the limbs.

In the firſt paroxyſms of the gout the ſwelling of the parts is of ſhort continuance, and leaves no reſtraint in the articular motions; but in proportion as the paroxyſms are repeated the weakneſs and rigidity increaſe: the articulation is no longer able to perform its habitual motion, and retains a ſort of ancyloſis. At length, when the diſeaſe becomes of long ſtanding, and in ſome particular caſes, there is ſecreted from the affected articulations an oſſeous juice, which acquires ſolidity, and forms nodoſities ſometimes of conſiderable ſize. Theſe tophi, which are phoſphate of lime, confine the motion of the parts, and ſometimes render the feet and hands deformed and impotent.

Berthollet obſerves that during fits of the gout the urine no longer contains free phoſphoric acid.

It is not uncommon to ſee fits of the gout come on alternately with ſymptoms of nephritis, ſimilar to thoſe occaſioned by the preſence of calculi

culi in the kidneys. This obſervation, compared with that of Berthollet, renders both more worthy of attention.

When the diſeaſe is of long ſtanding, it no longer confines itſelf to the articulations, and ſeems to have become conſtitutional; it ſpreads itſelf in a uniform manner to all the parts proper for receiving it, and appears in all the large ſyſtems of the interior organs, exhibiting varied ſymptoms, which come on alternately with arthritic pains, or which ſeem to ſucceed them.

Sometimes the derangement is very ſtriking in the ſyſtem of digeſtion; in which caſe the individual experiences loſs of appetite, belching, vomiting, a painful ſenſation at the ſtomach. Theſe ſymptoms come on alternately, or coincide with crampiſh affections or wandering pains in the limbs. When the gouty affection of the gaſtric ſyſtem continues very long, it often produces ſymptoms of hypochondriaſis more or leſs ſtriking.

At other times the gout makes its appearance in a part of the urinary organs, particularly in the neck of the bladder, and produces a ſuppreſſion of urine: in a word, it may affect different parts of the breaſt or the head; it then occaſions palpitation of the heart and ſyncope, with difficulty of reſpiration, pains in the head, vertigo, &c.

In ſome caſes a paroxyſm of the gout manifeſts itſelf, as uſual, by pain and ſwelling in one of the arti-

articulations, and, inſtead of terminating in a progreſſive manner, ſuddenly ceaſes: it is obſerved, at the ſame time, that the affection develops itſelf in an interior organ, and particularly towards the ſtomach or the neck of the bladder.

The gout makes its appearance particularly in the ſpring; more rarely in ſummer than during winter and autumn. This diſeaſe ſeems often to be hereditary; it is more frequent among men than among women. It is obſerved, in general, among robuſt perſons loaded with obeſity, who eat a great deal and take little exerciſe; in thoſe who uſe to exceſs fermented liquors and the pleaſures of love; who ſuddenly give over their habitual labours; and in thoſe who exhauſt themſelves by continually ſitting up late at night. It is the diſeaſe of literary men, and rarely comes on before the age of thirty-five or forty.

Sometimes one or two fits of the gout come on, and never again appear; but when the fits have been frequently repeated, there is eſtabliſhed a gouty habit, which it is very difficult to remove.

It appears that the gout is ſometimes cured by great changes effected in the organization; by a reverſe of fortune, which obliges the patient to paſs from a life of indolence and opulence to continual exerciſe and coarſer nouriſhment, &c.

PHLEG-

PHLEGMASIÆ OF THE BONES.

57. When a bone receives a ſmart blow, or is bent ſo ſuddenly that it has not time to yield, a fracture is the conſequence. The ſigns of a fracture are: a ſhortening of the part, increaſe of its thickneſs, a change in its direction; flexibility in a place before inflexible; mobility of the two fragments one againſt the other, with a crepitation ſenſible to the touch, and ſometimes to the ear. A fracture may be known alſo by the difficulty which the perſon experiences in making the leaſt motion; by the pain which accompanies it, and by ſeveral other ſigns, which depend on the form, the poſition and uſes of the fractured bone.

A gradual development of the general ſymptoms of phlegmon is obſerved in the ſoft parts which have been lacerated or torn, and ſometimes a general febrile excitement. Exact reduction of the fragments, reſt, moderate compreſſion, the local uſe of ſlight ſtimulants, and ſometimes bleeding, are ſufficient to produce a ſpeedy reſolution of the phlegmonous ſwelling.

Towards the tenth or twelfth day, a ſwelling, more or leſs voluminous, unequal, and which ſometimes aſſumes a deformed appearance, is diſcovered

covered through the fleſh in the place of the fracture. From the twenty-fifth to the thirtieth day the bone recovers its full ſtrength, and the place of the fracture is no longer known but by a ring more or leſs ſalient and rough, which ſoon diſappears, but which may be almoſt ever after felt through the ſoft parts.

According to anatomical obſervations and experiments made on living animals, a bone in uniting exhibits the following phænomena: During the firſt days there oozes from its two ends, and from the ſoft parts, which have been irritated or lacerated, a liquid firſt bloody and then ſerous, the reſolution of which is pretty ſoon effected. At a certain period the fractured extremities are covered and united by a ſoft reddiſh ſubſtance, which afterwards aſſumes the appearance and conſiſtence of a cartilage: this cartilaginous ſubſtance folds itſelf back on the exterior ſurface of the bone, and penetrates to its medullary ſubſtance. It ſoon acquires ſolidity; and the progreſs of its oſſification, in animals fed with madder, may in ſome meaſure be traced by the eye.

The ſolid *callus*, when it expands freely, is exceedingly voluminous, unequal, and covered with aſperities; but if formed under a gentle compreſſion it is ſmoother and leſs prominent. In general, the calloſity fills the medullary cavity, and

and interrupts its continuity, which however is re-eſtabliſhed in the courſe of time, at leaſt in part.

The progreſs of a ſimple wound which unites without ſuppuration is here evidently perceived. The fracture becomes the ſtimulus which excites the vital action of the bone, and increaſes its ſenſibility: pain and ſwelling take place, and there is produced a parenchyma, an apparent ramification, which cauſes the parts in contact to adhere, as is the caſe with the lips of a recent wound.

This progreſs then varies according to a great number of circumſtances. The clavicle becomes ſolid much ſooner than the femur. All the bones unite ſpeedier in children than in old perſons. At a certain age, in a ſtate of languor, where there is a ſcorbutic habit, &c. the callus is formed very late, and ſometimes it is never formed at all. In the latter caſe, a ſort of cicatrix is formed on each fragment, and they are afterwards found united by a ligament which allows them to move. A perfect adaptation of the fractured extremities haſtens their conſolidation; but it even takes place when the fragments touch only by their ſides. Motion even is not always an obſtacle to the conſolidation of fractures; and the calloſity is formed very well in animals without any application to confine the parts. In a word, a *ſimple fracture* conſolidates

ſolidates more ſecurely, in a ſhorter time, and with fewer accidents, than a *compound fracture*, where the bones are cruſhed, with a conſiderable diſcharge of blood, laceration of the integuments, wound, &c. *Formation of the callus.*

58. When a bone which has been laid bare is ſpeedily covered, the wound unites ſimply. If the bone has been at the ſame time cut, the ſurfaces of the diviſion ſwell, and exhibit the ſame phænomena as a ſimple fracture.

But if the bone remains a long time uncovered its bare ſurface becomes yellowiſh, then brown, and ſometimes black. At the end of a certain period, of greater or leſs duration, a fleſhy ring, of a vermilion red colour, which raiſes up the indented edges of an oſſeous lamina, is obſerved; the latter progreſſively detaches itſelf from the edges towards the centre, in one piece, or in ſeveral; and ſuffers to be ſeen on the bone a ſtratum of granulated fleſh, of a lively red colour, which furniſhes good pus, and which cicatrizes in the uſual manner of wounds.

The dead oſſeous piece ſeparates more ſlowly the thicker it is, and according as the vitality of the individual is leſs active.

Sometimes a portion of the bone becomes dead, and tends to detach itſelf alſo, without having been uncovered, in conſequence of a violent contuſion.

Pain takes place, the bone ſwells, and there is developed in the ſoft parts a phlegmonous irritation, which gives birth to an abſceſs, and the aperture of the latter generally remains fiſtulous till the dead part of the bone comes out. On thruſting a probe into the fiſtulous ſinus, a ſolid body, inequalities, and moveable fragments, &c. will be perceived. A long time is very often neceſſary before the oſſeous laminæ are ſpontaneouſly thrown out; but this operation of nature may be greatly ſhortened by extracting the dead and detached oſſeous fragment. *Exfoliation.*

59. When a patient has long experienced dull and ſometimes very acute pains in different parts of a limb, there may appear in ſucceſſion, and at periods more or leſs diſtant, an aſſemblage of phlegmonous ſymptoms, which ſometimes terminate by reſolution, and ſometimes end in a phlegmon the aperture of which ſoon becomes fiſtulous. For the moſt part ſeveral phlegmons are formed around the limb, and the aperture of each is contracted by a roll of fleſh inverted over the ſkin. They diſcharge a whitiſh ſerous liquid, which, when a momentary irritation comes on, aſſumes more conſiſtence.

During this proceſs the limb often ſwells to a conſiderable ſize, and becomes hard and unequal; ſometimes the bone becomes fractured in one or two

two places, in conſequence of the ſlighteſt effort. Very often, after ſeveral years, it is obſerved that a probe thruſt into one of the fiſtulas paſſes through a ſolid oſſeous ſtratum, and reaches a hard, dry, and ſonorous body, found to be moveable, and in which no pain is produced by percuſſion. The patient, tormented by a dull and conſtant pain, and by phlegmonous paroxyſms, more or leſs frequently repeated, falls at length into a ſtate of decay, which brings on death by adynamic fever, ſcurvy, flux, conſumption, &c.

On examining the part, a bone is found much ſwelled, unequal, tuberous, and pierced with holes correſponding by their number and poſition to the external apertures. In the cavity of this new bone is found an oſſeous cylinder, entirely looſe, having the whole thickneſs or only an interior ſtratum of the primitive bone, and which may be equal in length to the whole diſtance comprehended between its articular eminences. When the portion of bone which ſeparates is ſmall, the diſeaſe is exceedingly tedious and painful. The exterior bone is much leſs voluminous and leſs unequal; one fiſtulous aperture only is formed, through which oſſeous fragments ſometimes iſſue. The ſeparated part is often compoſed of ſeveral laminæ detached from the inſide of the bone *(mortification)*. *Necroſis.*

When the mortified bone is completely ſepa-

rated, it will be proper, before the patient is too much weakened, to form an aperture in the exterior bone of ſufficient ſize to afford a paſſage to the fragment it contains. This aperture then cloſes up ſlowly, following the uſual courſe of a wound, accompanied with læſion of the bone.

60. Necroſis is the reſult of an irritation produced in the bone, in the perioſteum, or in the medullary organ. Sometimes it is the conſequence of a violent contuſion, and very often it is impoſſible to aſſign any particular cauſe. It differs from exfoliation only by its extending to the whole thickneſs of the bone, or by taking place in the inſide, ſo that the ſeparated portion, encloſed in an oſſeous caſe, cannot free itſelf from it ſpontaneouſly: in other reſpects the progreſs is exactly the ſame; it is that obſerved in a wound occaſioned by a violent contuſion, by fire-arms, and which does not heal until the whole bruiſed ſurface is ſeparated by phlegmonous excitement and conſecutive ſuppuration. Hence, when any portion of a bone becomes mortified, there is produced in the contiguous part a peculiar mode of irritation, which is renewed and heightened by repeated paroxyſms, and gives place to phænomena, the progreſs of which varies according to the parts in which it is propagated. The diſeaſed bone becomes tumid and ſwelled; and the mortified portion

tion gradually detaches itſelf from the ſound parts; the perioſteum and the white tiſſues by which it is ſurrounded become painful, grow thick, aſſume a cartilaginous conſiſtence, and at length oſſify. Phlegmonous tumours take place in the neighbouring cellular tiſſue, and the apertures of the abſceſſes ariſing from them remain fiſtulous.

61. Another diſeaſe very often takes place in the ſpongy bones, or in the ſpongy parts of bones, but rarely in their compact parts. Its progreſs, which is generally very tedious, is ſtill little known. Sometimes it develops itſelf under an ulcer, the bottom of which is unequal, puffed up, browniſh, and filled with fungous fleſh, and which bleeds on the ſlighteſt touch. At other times the parts exhibit only a ſoft flabby ſwelling; the ſkin aſſumes at firſt a reddiſh, and then a violet or browniſh tint; it gradually becomes thin, loſes its organic texture, and at length ulcerates. Sometimes there is obſerved on the outſide, the orifice of a canal, which extends to the bone, through the flabby fleſh. This aperture diſcharges only a reddiſh, turbid, fetid ſeroſity, which blackens the inſtruments and linen. The probe penetrates eaſily to the bone, which is found to be covered with aſperities and full of holes. If the bone be laid completely bare, its ſurface appears black or browniſh, rough,

and covered with pores or cells filled with a thick, greasy, and fetid matter. By compression it sinks down, and a matter of the same kind is expelled.

Sometimes, however, the disease takes place at a greater depth below an exterior stratum, pierced only with some holes, through which the matter escapes. In certain cases, the bone appears as if carnified; the disease gradually spreads; and if left to itself the patient falls a sacrifice to it with symptoms of adynamic fever, scurvy, consumption, &c. But sometimes, when the individual is vigorous and of a strong constitution, the whole altered part of the bone detaches itself, as in the case of exfoliation, and leaves an ulcer, which after suppuration tends rapidly to cicatrize. To obtain a cure, it is however often proper to remove the whole of the diseased part. *Caries.*

Caries and exfoliation seem to have a certain affinity, which may be compared to that between a gangrenous ulcer and a wound by contusion which suppurates. In both cases the affection tends to spread; the vital action increases in the part contiguous to that affected, and this action contributes to produce the spontaneous separation of the mortified portion, &c.

Caries appears chiefly in consequence of syphilitic, scrophulous, scorbutic, cancerous, &c. affections. It is always a troublesome disease, especially

eſpecially where the bones are ſpongy; that of the articulations is rarely cured, and never without ancyloſis.

62. The bones are often ſubject to *tumours*, which ſometimes increaſe pretty rapidly with very acute pains, great heat in the part, and ſometimes even a general febrile excitement. Sometimes they proceed very ſlowly, without any pain or ſymptoms of acute phlegmaſia. Theſe tumours exhibit great variety with reſpect to their form, their ſize, their conſiſtence, and the changes they undergo. Some of them are hard, and poſſeſs little ſenſibility. When they acquire a certain degree of expanſion, they are ſometimes as hard as ivory, and remain in the ſame ſtate, without producing any other inconvenience than what may ariſe from their bulk and their poſition. Others follow a continued progreſs, or again enter into action after a certain period of inactivity. A new tumefaction, accompanied with pain, heat, and redneſs in the integuments, then takes place; and in the courſe of time there is formed an abſceſs, the aperture of which becomes a fiſtulous ulcer, with all the indications of caries. At other times the tumour is ſoft; it aſſumes a cartilaginous or even carneous conſiſtence, and ſeems to be formed by a ſwelling and ſoftening of the whole ſubſtance of the bone. Theſe tumours are almoſt always more or leſs

painful, and at length diſſolve, in ſome meaſure, into a puriform liquid. Sometimes the bone is in a ſtate altogether ſimilar to caries, partially ſoftened, cavernous, perforated, and filled with oſſeous fragments or aſperities. At other times it becomes ſoft, aſſumes the conſiſtence of cartilage, and undergoes the ſame phænomena as ulcerous cancer.

Theſe tumours take place ſometimes in conſequence of the violent contuſion of a bone; but it often happens that they ariſe from a bad ſtate of the conſtitution in general. They take place, in particular, after ſyphilitic, ſcrophulous, ſcorbutic, &c. affections. They have their ſeat in the perioſteum *(perioſtoſis)*, or in the bone itſelf *(exoſtoſis)*. And they often appear before an alteration has been manifeſted in the ſurrounding ſoft parts. Sometimes they ſeem to ariſe from an irritation, which is firſt fixed in the ſoft parts, and is then propagated to the bones. *Oſſeous tumours.*

63. The bodies of the vertebræ are particularly ſubject to theſe two laſt modes of alteration, eſpecially in young ſubjects.

The diſeaſe generally begins with wandering pains in ſome parts of the vertebral column, which increaſe by the motion of theſe parts. At the end of a certain period, of greater or leſs duration, the inferior limbs become weak, and children frequently

quently fall down. The debility goes on gradually increaſing, and terminates in a ſort of palſy; the foot becomes ſtiff, and is turned downwards, with an elevation of the heel. The patient experiences a ſenſation of pricking in the legs and thighs; ſometimes a ſort of palſy of the bladder, and even of the rectum, takes place; the vertebral column inclines, and forms a very ſtriking projection in a determinate point.

Sometimes purulent collections are formed externally in parts more or leſs diſtant from the ſeat of the diſeaſe; as towards the region of the groin, or at the hollow of the nates: their aperture, whether ſpontaneous or imprudently formed, diſcharges, during the firſt days, a quantity of pus, ſometimes thick and at other times ſerous, with a great many albuminous flakes: but in the courſe of ſome days this pus becomes fetid and browniſh; the orifice is covered with an eryſipelatous red, and ſometimes ulcerated throughout a great extent. The functions of the ſtomach are deranged, a fever and looſeneſs come on, and the patient dies in a month, or ſooner.

On opening bodies at different periods of the diſeaſe, there have been found, during the firſt ſtages, a conſiderable ſwelling, with a ſoftening in the ſubſtance of ſome of the vertebræ, of their cartilages and ligaments, and at later ſtages caries more or leſs advanced. In this caſe there is al-

ways found a purulent collection either in the thorax or in the pelvis: when there is no gibbosity or palsy, the lumbar vertebræ, the sacrum, &c. are found bare, and their surface appears carious.

This disease, when it attains to its utmost degree, is always mortal: it is generally less troublesome in children, because it manifests itself at its very commencement. In adults, the gibbosity for the most part does not appear till suppuration and caries have taken place.

In regard to the causes of this disease, nothing very certain is known: it is most common among children; very often it depends on a mode of irritation which may be checked by a stronger irritation. The speedy application of caustic potash, moxa, &c. in the neighbourhood of the tumour of the back has therefore been attended with success. The other means, most generally useful for preventing or checking the development of this disease, are those which tend to strengthen the constitution: such as wholesome nourishment, exercise proportioned to the age and strength of the individual; the cold bath, friction either dry or with aromatic substances, &c.

SPECIAL

SPECIAL AND CONSTITUTIONAL PHLEGMASIÆ.

64. It is not uncommon for this affection of the bones to assume a constitutional character. In this case the ordinary period of its development is that of the first or second dentition, and sometimes that also of puberty. It attacks more readily feeble children born of parents who have experienced it themselves; those who reside in dark, cold, and damp habitations; those who live poorly, or who are over-fed, deprived of exercise, &c.

The muscles of these children are generally lax, their skin is white and soft, with every appearance of their being in good health; the head is large, and the visage full and florid. If the development of the disease is to take place in the first year, or at the commencement of the second, the child is long in walking. If it develops itself at a more advanced age, the legs become weak; the child totters, and is continually falling down. It soon conceives a decided aversion to motion, and to the sports usual at that period. It affects the manners of old people; sometimes shows premature intelligence, with a hilarity which nothing can disturb; and at other times an air of stupor, and even a sort of imbecility.

A defor-

A deformation however is obſerved in ſeveral parts of the body; the vertebral column becomes bent in different directions; protuberances and nodes are formed around ſome of the articulations, particularly on the wriſts, the heels, the ſternal extremities of the clavicles and ribs, and the ſternum. The long bones become crooked, eſpecially in the fore-arm and legs; the different parts increaſe unequally, and ſome of them even become ſhorter. The firſt dentition is retarded, and the ſecond is ſometimes checked by the teeth decaying in the ſockets. The cranium aſſumes an extraordinary ſize and a deformed appearance, and the face remains ſhort for want of expanſion in the jaw-bone. The breaſt afterwards becomes contracted from one ſide to the other, projects forwards like the bottom of a boat, and aſſumes various miſ-ſhapen forms. The head, often ſunk down, is concealed between the ſhoulders, which project, and are more elevated on one ſide than on the other. The pelvis expands irregularly, and approaches the thorax, &c.

The body then begins to waſte, eſpecially in the lower parts; the viſage even becomes withered, dirty, ſcaley, and rugous. The abdomen is very prominent, in conſequence of the conſiderable expanſion of the liver, the meſentery, &c. The hypochondria are diſtended, and the ſkin is rough, dry, and hard. Theſe ſymptoms are accompanied with

with various affections of the breaſt, habitual difficulty of breathing, cough more or leſs fatiguing, ſpitting of blood, and pains in the ſide or between the ſhoulders. At this period death is unavoidable, and the patient falls a ſacrifice to the diſeaſe after a gradual decay, or by the appearance of ſome other affection, ſuch as dropſy, diarrhœa, ſcurvy, &c.

The anatomiſt then finds ſome of the bones ſoftened, the vertebræ tumefied, and moiſtened with a reddiſh ſeroſity; the ligaments and cartilages ſwelled and ſoft, particularly between the vertebræ. The extremities of the long bones are puffed up, and ſometimes converted into an oſſeous, cartilaginous, or carneous maſs; the bodies of ſome of the bones are waſted, harder, and more brittle. Collections of ſerous matter are found in the thorax and the pericardium; the meſenteric glands are large, indurated, &c.

This conſtitutional affection is not incurable during the firſt periods of its development. Its progreſs can be prevented or checked, chiefly by good phyſical education: ſuch as wholeſome nouriſhment, not too abundant; the proſcription of farinaceous ſoups, ſimilar to the food employed for fattening the livers of geeſe; perfect freedom of the limbs; a healthful habitation; exerciſe in the open air proportioned to the age and ſtrength of the individual; ſwimming, dry friction, partial exerciſe of the part,

or

or of the weakeſt ſide of the body. Every kind of ſupport or of machines, continually applied to aſſiſt the action of the weakened muſcles, muſt be entirely baniſhed, and occupations which exerciſe only one part or one ſide of the body, by forcing it to retain the ſame attitude, muſt be carefully avoided. On the firſt appearance of the affection in the bones, it will be proper to excite by moxa, the cautery, or a ſeton, a ſtrong and continued irritation, which may counteract the expanſion of that peculiar mode of action which produces the diſeaſe. The uſe of bitter ſtimulants, mercurials, &c. has alſo been found of ſervice.

Adults are daily ſeen, whoſe deformities atteſt that their bones, for a long time ſoft and flexible at a tender age, have at length acquired ſolidity. There are few inſtances of univerſal ſoftening and deformation of the bones at the period of adult age. *Rachitis.*

65. There is ſtill another conſtitutional affection, which manifeſts itſelf in the glands in particular, and in all parts where the lymphatic ſyſtem is abundant: in general it precedes rachitis. It ſeldom fails to make its appearance in individuals who ſhow at an early period, or bring into the world with them, a peculiar mode of exterior conformation; a white, ſoft, and ſmooth ſkin, the limbs round and plump merely by lymphatic fulneſs,

neſs, with the fleſh ſoft and flabby; the eyes blue and bleared; the hair a cheſtnut brown colour and buſhy; the viſage puffed up; the lips, alæ of the noſe, and eye lids extraordinarily thick; the jaw thick, with the angles ſquare and projecting; the cranium large; great delicacy in the ſenſes; a premature development of the intellectual faculties. Frequent fluxions of the eyes, noſe and ears, painful cracks in the alæ of the noſe and in the upper lip; a diſcharge of matter from the head, from behind the ears, and from the arm-pits; ſcabby tetters in different parts of the body are often obſerved in the ſame individuals.

At this period the progreſs of the diſeaſe may often be eaſily ſuſpended by the varied uſe of tonics of every kind; perturbing means, change of reſidence and in the mode of life, proper gymnaſtic exerciſes, &c.

A point of irritation is however ſoon eſtabliſhed in ſome of the glands, and commonly in thoſe of the neck, towards the angles of the jaw. A tumefaction and hardneſs, without pain and without any change in the colour of the ſkin, is firſt obſerved, and at the ſame time a moderate and tranſient febrile excitement. In the cellular tiſſue, near theſe tumours, new ones, bordered by a circle of the conſiſtence of paſte, are often formed. The latter ſoon ſhow a manifeſt fluctuation, and furniſh a liquid of a pale white colour, of no great conſiſtence,

ſiſtence, and ſometimes reddiſh. The ulcers which thence reſult leave always behind them diſagreeable ſcars. The tumours which have their ſeat even in the lymphatic glands remain very long ſtationary, and ſometimes do not ſuppurate till after ſeveral years. They then increaſe, with moderate pain and a purple colour of the ſkin; they riſe to a point, and at length exhibit an evident fluctuation. The matter is diſperſed in ſeveral ſmall inſulated points, and is diſcharged through ſeveral apertures. Though at firſt much diluted, it gradually becomes thinner, and at length exhibits only a viſcid, ſerous matter intermixed with whitiſh flakes. The ſmall apertures often become covered with reddiſh fungous papillæ, or yellow ſcabs. The ulcer however extends itſelf in an irregular manner, and its edges become hard and cruſty: if another tumour of the ſame kind ulcerates, it may cicatrize for a ſhort time. Hence an alternation of tumours, ulcers, cicatrices, and new ulcerations is obſerved, till, the gland being completely waſted, there is formed an ultimate cicatrix with fretting and rugæ—permanent and evident teſtimonies of this troubleſome diſeaſe.

The ſame ſeries of phænomena is often ſeen to take place in the glands which are below the clavicles, under the arm-pits, &c.

The mammellæ are rarely attacked, and it appears that the affection then fixes itſelf in a ſpecial manner

manner in the lymphatic glands, which are adjacent to the mammillary gland. An induration commonly takes place; and if the tumour ulcerates, the mammella aſſumes a livid colour, becomes flat, contracted to the ſides, and exhibits a deep furrow of a ſhining red colour. The matter appears ſometimes thick; but for the moſt part it is liquid, black, and has a fetid ſmell.

In certain caſes, indolent ſwellings are formed around ſome of the articulations, as the elbow, the knee, the joints of the fingers and toes. At the end of a certain period, of greater or leſs duration, ſeveral cracks appear, from which is diſcharged a ſmall quantity of a reddiſh matter. The tumour generally increaſes, and the aperture of the ſkin is filled with fungous fleſh, which ſometimes ſpreads beyond it. The parts of theſe tumours, when obſerved at this period, appear ſoft, and as it were putreſcent; the bones are ſoft, carious, or reduced to a ſort of dirty browniſh pulp. The articular cartilages are much leſs altered by the progreſs of the diſeaſe; the bones and the muſcles loſe their continuity, and the part at length detaches itſelf entirely. If the articulation be of conſiderable ſize, ſuch as that of the knee, elbow, &c. the local affection gives riſe to the general ſymptoms of almoſt all chronic diſeaſes. A ſlight fever comes on, with ſmall fits of ſhivering, a continual

diarrhœa, loſs of ſtrength, and all the ſymptoms of ſcurvy in its laſt ſtage.

In other caſes, the irritation fixes itſelf in ſome parts of the ſkin or of the ſub-cutaneous tiſſue. The ſwelling proceeds very ſlowly, without pain, or any change of colour in the ſkin; it then becomes ſoft, riſes up more and more, and aſſumes a purple or violet tint. The tumour at length opening pours forth a thick, reddiſh matter, which ſoon becomes liquid, yellowiſh, and mixed with clots of an albuminous appearance. On the edges of the ulcer the ſkin aſſumes a violet colour, becomes ſcaly and hard, and is covered with ſmall puſtules. The fleſh at the bottom of the ulcer is flabby, and of a pale red or purple colour.

The irritation may alſo proceed to the glands near the abdominal and thoracic organs.

The affection of the glandulous ſyſtem of the meſentery is characterized by all the ſymptoms of derangement in the digeſtive ſyſtem. In the courſe of time theſe ſymptoms increaſe; the abdomen becomes diſtended, voluminous, and, as it were, full of protuberances.

The affection of the bronchial glands is announced by derangement in the functions of the pulmonary organ.

In all theſe caſes, the ſtrength is gradually exhauſted; the patient becomes exceedingly attenuated,

ated, and the diſeaſe terminates like all other chronic affections.

The order we have followed in this view is not always that of nature. It exhibits the uſual progreſs of different local affections; it even follows the moſt common order of their ſucceſſion; but there is none of them which may not preſent itſelf firſt. Cutaneous ulcers, articular tumours, glandulous ſwellings, are often obſerved without any appearance of that peculiar conformation, the exiſtence of which is almoſt an infallible indication of the diſeaſe.

This diſeaſe, when once developed, is exceedingly obſtinate: it makes its appearance in every part of the lymphatic ſyſtem, and in every part where that ſyſtem is prevalent. The alterations which thence reſult appear ſucceſſively in the adjacent or diſtant parts, from one ſide to the other; from the thoracic to the abdominal limbs; from the exterior parts to the interior organs, &c.; which gives to the whole of this malady an appearance of ſingular mobility. The cutaneous ulcers are ſucceeded by herpes, or other anomalous eruptions; the latter by a ſwelling of the jugular glands, and theſe by a ſcabby eruption in the head: the meſentery is attacked, and the exudation of matter from the head ceaſes: when the jugular glands become ſwelled, the affection of the breaſt diſappears.

All theſe phænomena are merely the reſult of a peculiar mode of nervous action, which is excited, and becomes peculiar to the ſame anatomic ſyſtem of organs. This mode of action produces, in different parts, a ſeries of ſymptoms ready to ceaſe when a certain circumſtance favours their development in ſome other part. In general, however, there is always a moment when this peculiar conſtitution extends to a great number of points; it affects at the ſame time the meſentery, the lungs, the neck, &c. and leaves in the glandulous organs of theſe parts evident traces of its ravage.

The revolution of an acute diſeaſe has been ſeen to check the progreſs of this conſtitutional diſeaſe, and to make it diſappear for ever. In ſome caſes there is effected, at certain periods, eſpecially towards thoſe of puberty, a ſlow change in the conſtitution. The epidermis becomes more pliable; the ſkin loſes its pale colour; the volume of the body decreaſes, or a very ſtriking emaciation takes place; the pulſe becomes frequent, and febrile ſymptoms often appear. The ulcers, however, diſcharge a thicker, more opake matter, and cicatrize. All the ſecretions increaſe; the ſwelling of the glands ſubſides; and this revolution, which is more common among country children than among thoſe of towns, produces a laſting cure in robuſt individuals capable of enduring it. But when

when the diatheſis is fully eſtabliſhed, and the patient already exhauſted, it only haſtens the progreſs of the diſeaſe.

The external ſymptoms are attended with no danger; but they are always followed by internal affections of a more ſerious kind, or by a very troubleſome alteration in ſome of the large articulations. The progreſs of the latter, though not rapid, brings on much ſooner attenuation, diarrhœa, ſlow fever, ſweats, &c. and all the ſigns of decay, which is ſoon followed by death. *Scrophula.*

The ſcrophulous diſeaſe is very common in Europe, particularly in Spain, England, and France. It ſhows itſelf chiefly in certain hollow valleys, and eſpecially in thoſe which look towards the north and the weſt, on the marſhy borders of ſome rivers. It is remarked that it appears oftenеſt among overfed children exceſſively corpulent, who take little or no exerciſe, or who are crowded together in towns, in confined, dark habitations, dirty, damp, and badly aired.

This diſeaſe rarely manifeſts itſelf before the ſecond and after the twentieth year: its development often coincides with the period of ſome natural or accidental revolutions, ſuch as dentition, puberty, menſtruation, pregnancy, parturition, lactation, different acute diſeaſes, &c. In infancy, it directs its effects chiefly towards the neck, the head, and often towards the meſentery; in ado-

leſcence it affects the lungs, &c. In general, its action is excited from the commencement of ſpring to the ſummer ſolſtice, under a cold, damp conſtitution of the atmoſphere; in ſummer it often decreaſes, and the ulcers cicatrize, in order to be renewed the ſpring following.

It has ſometimes been poſſible to imitate by art the proceſs employed by nature for the cure of this diſeaſe. In a word, the caſe is here the ſame as in all very obſtinate chronic affections: they are either incurable, or gradually diſappear at the end of a very long period, and by the concurrence of a thouſand little circumſtances which it is often impoſſible to appreciate. In all theſe caſes, there is no remedy which has not ſometimes proved efficacious; and all of them have often entirely failed.

But amidſt the variety of preſcriptions employed, ſome rational and others more or leſs abſurd, it is evident that tonics long continued, and varied with much care, may be of utility. It is by the application of a good regimen, in particular, that the moſt ſalutary effects are produced: change of reſidence, travelling, ſea voyages, gymnaſtics, wholeſome and aromatic nouriſhment, varied occupations, &c.

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66. In the article on catarrhal affections of the urinary paſſages, we have given the hiſtory of one, the matter ſecreted by which has a ſpecific contagious

gious property, and produces the ſame diſeaſe, when brought into contact with the mucous membrane of the urethra or of the vulva, in the act of coition *(ſyphilitic blennorrhagia)*; and we have given a ſufficiently ample account of its moſt uſual progreſs. This catarrhal affection exhibits highly varied degrees of intenſity: ſometimes it is ſcarcely ſenſible, and can be diſcovered only by the exiſtence of the running; at other times it is accompanied with a ſtrong fever, very great ſenſibility in the whole extent of the urethra, intolerable heat in making water, or an abſolute impoſſibility of voiding it.

The affection in general is confined to the mucous membrane of the urethra; but ſometimes it extends to the contiguous parts; the præputium ſwells, becomes red and painful, with an impoſſibility of pulling it back ſo as to uncover the glans *(phimoſis)*, or of pulling it forwards to cover it *(paraphimoſis)*. The glans, ſwelled and painful, may be ſtrangulated alſo by the contracted aperture of the præputium, and exhibit ſymptoms of approaching gangrene. Painful involuntary erections take place, with an incurvation of the penis; and phlegmonous congeſtions may be formed in different parts of the adjacent cellular tiſſue, with ſymptoms more or leſs ſevere, and a termination more or leſs diſagreeable.

Sometimes after ſeveral blennorrhagiæ of this na-

ture, the canal of the urethra contracts; a chronic ſwelling takes place in its ſides, in the proſtate gland, and at the neck of the bladder, with different kinds of excreſcences in the urethra. In all theſe caſes the excretion of the urine is deranged: it is obſerved that, after repeated and painful efforts, the urine iſſues in a ſlender ſtream, interrupted, ſometimes bifid, and falling in a vertical direction. The retention of urine may even become complete.

At other times the ſemen does not iſſue from the urethra, either at the moment of ejaculation, or as long as the erection laſts; but only after a longer or ſhorter period, and ſeems to fall merely by the effect of its gravity: in general, the patient ſuffers from the inſtant of the ejaculatory orgaſm till the ſemen is completely evacuated.

Under ſome circumſtances the blennorrhagic irritation ſeems to produce ſymptoms of diſeaſes in the diſtant parts which have a relation with the urethra, in regard to functions, ſtructure, or ſympathy, ſhown by various phænomena of vitality: of this kind are the teſticles, the inguinal glands, the conjunctive membrane, that of the noſtrils, the back part of the mouth, &c.

When the teſticles are affected during blennorrhagia, the patient firſt experiences in the groin a ſenſation of conſtraint which extends along the cord of the teſticular veſſels. It is obſerved, at the

ſame

ſame time, that the urethral ſecretion gradually decreaſes, or ſuddenly ſtops: the ſcrotum ſoon ſwells, and becomes red and painful; the epididymis, and even the teſticle, are exceedingly ſenſible to the touch. All theſe ſymptoms rapidly increaſe, with intenſe fever, and a pain which is propagated to the loins.

After a longer or ſhorter period the ſwelling and pain decreaſe, and the diſeaſe terminates either by *reſolution*, which is favoured by the ſpeedy uſe of local bleeding, of topics at firſt mucilaginous and then ſtimulant, and by the natural or artificial return of the urethral running. In this caſe the epididymis in general remains tumefied, either by an *induration*, which is ſometimes followed by a ſerous collection in the peritonæal tunic, and which at other times by an ulterior mode of action paſſes to the cancerous ſtate; or by *ſuppuration*, which often leaves chronic ulcers with the preceding ſtate of induration. In the laſt place, the teſticles may waſte away until no traces of them remain. Hunter ſpeaks of a man whoſe teſticles diſappeared in this manner in the courſe of eighteen months.

The phænomena which follow the affection of the inguinal glands, are thoſe which naturally reſult from a phlegmon of theſe parts.

We have deſcribed in another place the uſual ſeries of the ſymptoms of the affection of the conjunctive membrane; but when this affection coin-

cides with blennorrhagia its progreſs is often more rapid. It announces itſelf by a ſlight pain with watering of the eye; the pain then becomes more acute, and the redneſs more apparent. The conjunctive membrane ſwells, aſſumes a carneous aſpect, and ſecretes a thick, viſcous, and acrid matter. The cornea ſeems depreſſed, the eye-lids ſwell, and riſe up, ſo that the eye remains half open; phlyctænæ appear on the conjunctive membrane, which give riſe to ſmall ulcerations; the cornea becomes opaque and whitiſh; and there ariſes ſometimes above its ſurface a ſmall tumour, the ſpontaneous or artificial rupture of which may ſuffer the interior parts of the eye to eſcape.

The progreſs of this diſeaſe, though exceedingly rapid during its firſt ſtage, gives way to local bleeding and to ſcarification, eſpecially when the blennorrhagic running continues or is renewed.

Theſe different diſeaſes, which accompany ſyphilitic blennorrhagia, are almoſt always occaſioned by cauſes capable of producing a ſudden exacerbation of the urethral phlegmaſia, at the ſame time that the other parts are diſpoſed, either by weakneſs or a peculiar irritation, to become affected.

67. Syphilitic blennorrhagia is neceſſarily connected with another affection, which ariſes from the contact of a ſecretion equally contagious, and produced

produced by a ſmall ulcer, generally ſituated in the genital parts, and which is propagated by coition. Some days after the impreſſion of the virus the patient experiences an itching with heat in the præputium or in the glans; a ſmall pimple then ariſes in the form of a miliary puſtule, pointed and red, the ſummit of which becomes white, gradually flattens, and forms a veſicle. This veſicle when it breaks diſcharges a thin aqueous liquid, or a thicker yellow matter. The ulceration extends in ſurface and depth; ſeveral commonly appear in ſucceſſion, and in the ſame manner. Theſe ſmall whitiſh and ſuperficial ulcers furniſh ſometimes a thick opake matter; the edges of them are round, ſomewhat projecting, and are neither hard nor very red. At other times they have irregular angles, are deep, and of a black or livid colour, with projecting red and hard edges: they diſcharge a browniſh ſerous liquid.

Theſe ulcers ſcarcely ever diſappear ſpontaneouſly; they may take place on all the mucous ſurfaces where the contagious matter is immediately applied; on the whole extent of the glans, on the interior ſurface of the præputium, and at the extremity of the urethra; on the interior part of the vulva, in a great part of the vagina, and around the anus; on the lips, and in every part of the mouth; around the mammillæ and their areolæ; but

but never on the ſkin covered with epidermis. *Chancre.*

At firſt, theſe ulcers are always merely a local affection, and may be ſpeedily cured when converted into ſimple ulcers, either by extirpating their root, or by deſtroying it with cauſtic.

This method is ſure in its principle, when the chancre is recent; but it is not prudent to employ it when the ulcer has continued a certain time; when it is impoſſible to fix it, or when the concomitant ſymptoms will not allow the exacerbation of an affection already dangerous.

It may happen, either in conſequence of the number of ulcers, or of the too incautious application of cauſtics, that the irritation will be communicated to the whole extent of the præputium and of the glans. The phænomena which we have ſeen in blennorrhagia may take place when the præputium, in conſequence of its being ſwelled, can neither be made to cover nor uncover the glans *(phimoſis* and *paraphimoſis)*, and when the contraction of the aperture of this expanſion of the ſkin ſtrangles the glans to ſuch a degree as to produce on it cryſtalline veſicles, which announce a ſpeedy gangrene.

Theſe affections are generally removed by local bleeding, inciſion of the præputium, &c. When of long ſtanding, they leave in the parts a ſwelling, with

with permanent induration. Such is the origin of thoſe nodes or tubercles, more or leſs numerous, more or leſs prominent, either viſible or concealed in the tiſſue of the parts, and ſenſible only to the touch; of thoſe hard cords which produce habitual phimoſis or paraphimoſis; of thoſe rolls which give to the vagina the falſe appearance of virginity.

68. Chancres exhibit the principal character of ſyphilitic affection, and are probably the excluſive ſource of the product which propagates this diſeaſe by the way of contact; but very often the irritation which accompanies this ulcer occaſions in the genital parts the formation of *excreſcences*, highly varied in their form: ſome of them are oblong, ſlender, and ſmooth *(porri)*; others ſhort, ſmooth, and flat *(verrucæ)*; and ſome flat and oblong (*condylomata*): in a word, there are ſome very large, and cut into fringes, leaves, &c. *(criſtæ)*. Excreſcences ſimilar to the criſtæ ariſe around the anus; ſpheroidal, granulated tumours adhering to the ſkin by a thin pedicle (*thymi, ficus*, &c.) Theſe fleſhy excreſcences are ſometimes ſoft, pulpy, and ſmooth; ſometimes hard and rough: in general, they have the ſame colour as the ſkin, and are ſuſceptible of becoming inflamed and ſuppurating in conſequence of any irritation. All theſe excreſcences ſometimes fall off in ſcales, or dry up ſpon-

ſpontaneouſly; at other times they leave a root, from which they are continually reproduced. They often remain a long time after the ſyphilitic conſtitution has been deſtroyed by means of proper treatment. They then ſeem to be maintained by the force of habit, and their reproduction is favoured by the heat and moiſture of the part, forming in this manner a real animal vegetation. I have often obtained a cure of very ſtrong porri, which covered the whole ſurface of the glans, and for which a great deal of mercury had been taken without any effect, merely by cauſing the glans to be kept uncovered for ſome time, ſo as to deprive theſe excreſcences of the heat and moiſture which maintained them.

69. Ulcerous fiſſures, which often ariſe from a mere laceration of the ſkin, but which in other caſes may be conſidered as real chancres, often take place in the rugæ or furrows around the anus. Theſe ulcerations, which are ſometimes ſuperficial with ſoft edges, and attended with little pain, furniſh a conſtant excretion of an opake white colour. At other times they are deeper, with hard projecting lips, produce ſhooting pains, and diſcharge a browniſh, turbid matter. *Rhagades.*

Almoſt all theſe local affections have this in common, that during their whole courſe they may give riſe to phlegmaſic ſwelling in the neighbouring

ing glands: that of the inguinal glands is the moſt common, and the moſt remarkable. The patient firſt experiences a ſlight pain in the groin, which is ſoon followed by a tumour, tenſion, hardneſs, local heat, throbbing pain, without any change in the colour of the ſkin yet taking place. The tumour, ſenſible only to the touch, riſes more or leſs ſpeedily, and acquires a volume which varies from the ſize of a pigeon's egg to that of the fiſt. The ſkin becomes red, and fever ſometimes announces itſelf by the uſual ſymptoms. A reſolution may be effected; but there often remain chronic indurations, forming ſometimes one tumour, and ſometimes ſeveral tubercles arranged in rows or diſperſed different ways in groupes. The ſuppuration is ſeldom very ſpeedy; it is followed by a very obſtinate ulcer, and by calloſities which become ſoft only after a long courſe of time. The fleſh is flabby and exuberant, and theſe ulcers ſecrete a clear liquid, interſperſed with albuminous flakes; the edges of them project, and appear as if torn, and withered by a ſort of gangrene. At other times, however, the aperture of the phlegmon leaves only a ſmall fiſtulous hole, with an exudation of matter, which continues until the whole hard ſwellings have diſappeared. *Buboes.*

Theſe buboes, produced by the ſpecific irritation of ſyphilis, are not different from thoſe which take place ſometimes in conſequence of the introduction

duction of a probe into the urethra, or of a prick in the foot. They are entirely ſimilar to thoſe which ariſe in the axillary glands, and after phlegmonous irritation in the fingers or wriſt. In all theſe caſes the phlegmon follows the ſame progreſs, and exhibits no eſſential difference.

70. The preceding affections always ſuppoſe the application of a ſpecific matter, either to the mucous ſurface or to ſome part deprived of epidermis. Chancres and blennorrhagia take place in the part which has received the impreſſion, and produce a ſecretion poſſeſſing the ſame ſpecific quality. It has not yet been proved that the matter excreted by a chancre is the ſame as that furniſhed in the blennorrhagia, and that theſe two affections can be reproduced from each other. It is certain that in the greater number of caſes each reproduces that mode of development which is peculiar to it. It however appears, that under ſome circumſtances the product of a chancre, conveyed to the urethra, excites in it blennorrhagia; but it is not probable that the product of an urethral catarrh can ever give riſe to a chancre.

The different cutaneous excreſcences are for the moſt part conſecutive phænomena, as well as buboes; but, even if we ſuppoſe that they can be directly produced by the impreſſion of the ſpecific irritant, it does not appear that this irritation can ever

ever impreſs a contagious character on the matter furniſhed by theſe excreſcences.

71. Whatever may be the affection which firſt appears, it is merely local, and is always ſuſceptible of being annihilated when it begins to develop itſelf, if an impreſſion of another order, ſufficiently ſtrong to derange the firſt, be determined towards the affected part. This reſult may be obtained by exciſion, the cautery, different cauſtics, and other powerful irritants. But at the end of a certain time, the duration of which it is impoſſible to aſſign, the local impreſſion may have produced in the whole conſtitution a particular ſtate, which ſooner or later gives riſe to a ſeries of phænomena ſometimes very ſingular. This general ſtate appears to be produced, for the moſt part, by the preſence of a chancre.

The firſt ſigns very often are: a dejection and extraordinary languor, pains around the head and in the ſhoulders, a ſenſation of laſſitude in all the limbs: at other times are obſerved watchfulneſs, or ſleep which does not revive the ſtrength, agitation, an acceleration of the pulſe, heat in the ſkin, decreaſe of appetite; the patient becomes thin, and a rapid decay may enſue. All theſe phænomena, which are very obſcure, exiſt ſometimes for a long period, and are at length ſucceeded by others which become more poſitive.

The firſt ſymptoms manifeſt themſelves chiefly in the mucous membranes, the naſo-guttural conduits, and the ſkin. The patient experiences dull pains in the mouth, throat, and noſtrils; deglutition becomes difficult; the fauces are hot and red; and theſe ſymptoms are followed by ulcers of a dirty white colour, with thick, red, and hard edges, which have an appearance as if torn. Puſtules alſo, which are converted into eating ulcers, take place in the velum palati. Similar ulcers are obſerved in the lips and gums, in the inſide of the mouth and noſtrils: the diſeaſe ſometimes develops itſelf in the ſinuſes, and produces ulcers, which diſcharge a highly fetid matter. In ſome caſes the voice alters, and hoarſeneſs and aphonia take place.

Particular ſymptoms are obſerved alſo in ſeveral other parts:

In the ear, an eroſion of the guttural conduit, and different affections in the organs of hearing.

Towards the eyes, a ſwelling of the edge of the eye-lids, with hardneſs, itching, redneſs, ulceration, and excreſcences. On the conjunctive membrane, flow, obſtinate ophthalmia, and the different phænomena which are the conſequence of them.

Towards the genitals, ulcers ſimilar to the primitive chancres, but which follow a more rapid progreſs.

On

On the ſkin, ſpots of different forms, ſizes, and colours; fiſſures in the ſkin of the hands, and in the ſoles of the feet; an itching, with an exudation of a reddiſh matter: the epidermis detaches itſelf in pieces; puſtulous tumours, hard, dry, and ſcaly, and ſometimes ulcerated, more remarkable at the angles of the lips, the alæ of the noſe, around and on the whole extent of the ſcalp, take place; the hair, nails, &c. fall off.

In a word, phlegmonous tumours, which follow a very ſlow progreſs, may ariſe towards the lymphatic glands.

In its further progreſs, the diſeaſe ſeems to attack in a particular manner the white fibrous organs, and to produce phænomena very much varied. Thus different alterations are obſerved in the organs of hearing, with violent pain in the cavity of the ears, ſwellings in the joints, tendons, aponeuroſes, &c.; with pains exceedingly variable, both with reſpect to their nature and intenſity, ſometimes fixed to one point and ſometimes wandering; generally more acute in the evening and at night; more frequent in winter and in cold countries. Theſe tumours terminate, ſometimes, in collections of a viſcous matter, and at others are transformed into hard nodes, which may remain during life.

In the laſt ſtage of the diſeaſe, the oſſeous tiſſue itſelf ſeems to be affected; the oſteocope pains in-

creaſe in the night-time, and the affected bones experience different alterations. They ſwell in an enormous degree, become ſoft and ſpongy, and acquire a cartilaginous conſiſtence, accompanied with caries, exfoliation of fragments or laminæ of greater or leſs thickneſs. Several bones of the noſe and fragments of the jaw-bones detach themſelves in ſucceſſion, the teeth drop out, &c.

At this period the glands of the interior organs begin to be affected; thoſe of the meſentery, of the pancreas, and of the bronchiæ ſwell, become hard, and at laſt ulcerated.

In this ſtate, as at the end of almoſt all chronic diſeaſes, the ſtrength becomes gradually exhauſted; the general ſymptoms of ſcurvy, in its laſt ſtage, come on, with diarrhœa and nocturnal ſweats, which inevitably bring on death. *Syphilis* (confirmed pox).

In this general view we have endeavoured to exhibit both the moſt uſual phænomena of conſtitutional ſyphilis, and the moſt conſtant order of their ſucceſſion; but it is far from correſponding exactly with all the particular caſes under both points of view: very often the order of their development is inverted.

In theſe phænomena no peculiar affection is diſcovered. None of the ſymptoms enumerated belong excluſively to ſyphilis; and we may even add to them all thoſe of the other diſeaſes, and particularly

cularly of ſuch as are chronic. All theſe effects can be conſidered only as a new mode of general action, which produces particular alterations in the different organs.

This ſtate always ſuppoſes, that a matter furniſhed by a chancre and applied to a mucous ſurface, or a part without epidermis, in another individual, has excited there a ſpecific irritation, and a peculiar mode of action in the nervous ſyſtem, which is not of ſuch a nature as to ceaſe ſpontaneouſly, and which produces a ſecretion capable of propagating the ſame diſeaſe by the way of contact.

It is very doubtful whether a bubo or cutaneous excreſcences are the primitive reſults of contagion. Theſe affections, which indicate conſtitutional ſyphilis, appear to be only conſecutive phænomena, ſuſceptible of ceaſing and of being continually renewed, and which do not give to the individual in whom they appear the property of communicating the diſeaſe.

Blennorrhagia, after having ſucceſſively paſſed through the ſame ſtages as a common catarrh, generally terminates of itſelf; and for the moſt part gives riſe to no phænomena which announce conſtitutional ſyphilis. Chancres, which ſeem to be the ſame thing in blennorrhagia that aphthæ are in catarrhs, exhibit this peculiarity, that they never diſappear ſpontaneouſly, and that they are always followed by a ſyphilitic diatheſis. Beſides, it is

known that at the period when ſyphilis was introduced into Europe, its ſymptoms were generally more violent than they are at preſent; and that for nearly half a century few inſtances of blennorrhagia are mentioned. The latter affection is now more common, and conſtitutional ſyphilis is much rarer and much leſs violent in its effects.

It would appear that in the courſe of time, and by a treatment leſs violent, more ſuitable and more expeditious, the chancre would loſe its intenſity; and that its product, becoming leſs energetic, would ceaſe to have the property of producing ſo eaſily the ſame affection by the way of contact.

It appears then that the ſecretion of a chancre, while it loſes its ſpecific, contagious property, ſtill retains the faculty of producing a particular catarrh. The ſecretion of this ſpecific blennorrhagia does not, in general, poſſeſs ſufficient intenſity to reproduce a chancre; but it retains the property of perpetuating itſelf by the way of contact.

One might even ſay, that in the courſe of time blennorrhagia degenerates in the individuals who have been affected with it more than once; that it no longer exhibits the ſame malignity in its ſymptoms, and that it becomes leſs contagious.

72. It is not probable that the fœtus can be affected by ſyphilis, as is the opinion of Doublet. When the ſymptoms by which that diſeaſe is characterized

characterized appear after birth, there is reaſon to think that the child, whoſe ſkin is as yet covered by an epidermis exceedingly thin, has contracted them during parturition, in paſſing through the vulvo-uterine conduit, or has received them afterwards from its nurſe.

73. The moſt uſual and moſt effectual remedy againſt conſtitutional ſyphilis is mercury. The different ways of adminiſtering it, which are exceedingly numerous, may be ſeen in moſt medical works. Formerly this metal was employed in ſuch a manner as to produce an abundant diſcharge of ſaliva from the mouth. At that period a complete ſalivation was perhaps neceſſary; but at preſent it ſeems to be uſeleſs. Practitioners, however, ſtill agree in not depending on the efficacy of mercury, unleſs its action begins to manifeſt itſelf on the ſalivary glands, or on ſome other organs, ſuch as the inteſtines or the ſkin. In general, the treatment is the more certain, according as the action is more uniformly diſtributed to almoſt all the ſecretory organs.

The doſes of mercurial preparations muſt be varied according to the actual ſuſceptibility of the individual, and according to many other particular circumſtances. The action of the remedy muſt be ſufficiently ſtrong, and long enough continued, to deſtroy the ſyphilitic habit, which has

produced and which maintains the different ſymptoms of the diſeaſe. This foreign mode of action being deranged, the different affections return to a ſtate of ſimplicity, which renders them ſuſceptible of a ſpontaneous cure.

Sometimes the ſymptoms of the diſeaſe aſſume, by the action of the mercury, a peculiar character, which renders them equally obſtinate. At other times, new ones are called forth; but both may afterwards terminate either ſpontaneouſly or by the effect of ſome other remedies.

It often happens, after a long and fatiguing courſe of mercury, that the ſymptoms do not diſappear, for want of ſufficient vital energy: in this caſe they yield to the varied application of corroborants.

The ſyphilitic affection has been cured by a great variety of means. In warm countries, a cure is almoſt conſtantly effected by the uſe of ſudorifics, taken in very large doſes, with the concurrence of all thoſe means which are proper for ſeconding their action. The uſe of carbonate of ammonia has ſucceeded with profeſſor Peyrilhe; and we know from the teſtimony of Sanchez, that the Perſians and the Poles are acquainted with no better means of cure than to immerſe themſelves for twelve days, up to the neck, in the ſewer of a neceſſary. A coachman of Paris either cured or killed, in eight days, by the uſe of coloquintida

wine. In 1549, an old practioner of Palermo effected a cure in twelve days, by causing his patients to take every fourth day, that is to say, three times in the course of the above period, an ounce of good old wine, in which a coloquintida apple had been infused for one night. He provoked sweats by placing the patient in a warm bed during the days of interval. Fallopius relates that galley slaves have been cured by very severe labour, with nourishment of a moderate quality and in small quantity. The people of Auvergne often carry the pox with them from the towns to their mountains, and are cured without the use of any remedies *.

Success obtained by means so different in appearance, but all similar, as they are very energetic in their effects, tend to prove that syphilis consists only in a certain state of constitution or mode of being, the habit of which must be destroyed by impressing on the whole system a violent shock or general revolution, maintained for a determinate time.

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74. A blow on the breast produces in its cellular tissue a mode of excitement nearly similar to that of phlegmon : a swelling, accompanied with redness, heat, and an extraordinary degree of sensibility, &c. takes place. It is possible that a *resolu-*

* See *Topographie de la Haute Auvergne.*

tion may be completely effected; but if the impreſſion has conveyed its effects to the glandulous tiſſue itſelf, it frequently happens that the reſolution does not bring it back to its former ſtate. At the end of a certain time, a hard and often very ſmall nucleus is obſerved, which increaſes ſlowly, without producing much reſtraint or even very ſenſible pain. This tumour, *indolent* even when preſſed, which is generally round, and moveable in the cellular tiſſue, remains afterwards ſtationary for a longer or ſhorter time. At this period it would exhibit to the anatomiſt a ſtructure almoſt homogeneous, a conſiſtence more or leſs firm, from that of lard to the conſiſtence of cartilage: a whitiſh colour pretty uniform, and the appearance of boiled white of an egg, or albumen, which has aſſumed the concrete form. *Schirrhus.*

After a certain period, however, the tumour experiences a new mode of action, very remarkable: it is generally produced by a contuſion, by the improper uſe of cauſtics, by any irritant whatever, and in ſome caſes without any appreciable cauſes.

The tumour acquires gradually an extraordinary degree of ſenſibility; the patient firſt experiences titillation, a diſagreeable itching, heat more or leſs violent, and ſoon after a tranſient ſhooting pain or pungent lacerating pains, in ſhort, paroxyſms, which increaſe on the approach of night.

The tumour increaſes in an unequal manner, and

and its ſurface appears indented; the ſkin in ſome parts acquires a purple red colour, and then becomes violet and browniſh. It exhibits blueiſh lines or nodes, which ariſe from a varicoſe enlargement of the neighbouring veins; it grows tapering, and preſents one or more points, to which the pain ſeems, in particular, to be directed; it aſſumes a more ſtriking purple colour, and an exquiſite degree of ſenſibility. In conſequence of a gangrenous ſort of excoriation, it ſuffers to exude a liquid, which is generally reddiſh without any diſagreeable odour, but which ſoon becomes exceedingly fetid. A ſcar then detaches itſelf; the ulcer enlarges in every direction, and a hæmorrhagy is often produced by the ſucceſſive eroſion of the varicoſe veins. The bottom of the ulcer is unequal, of an aſh colour, livid or black. Its thick, projecting, and hard edges ſplit, the pain becomes pungent, burning, and intolerable. *Cancer.*

The tumour however continually increaſes, notwithſtanding the ſuppuration; in proportion as one part ſeems to diſſolve, the ſwelling ſpreads by a ſort of irritation to the neighbouring cellular tiſſue, and the tumour ſoon approaches the muſcles, or even traverſes them, and fixes itſelf on the ribs. At this period a hardneſs and ſwelling of the glands near the arm-pit are generally obſerved. Sometimes the other breaſt tumefies, and becomes hard; and ſimilar tumours, which occaſion a dull

a dull pain, manifeſt themſelves even in very diſtant parts. At laſt the cancerous diatheſis often extends its effects to the fibrous membranes of the articulations, and to the bones, which ſwell, become carious as well as exceedingly brittle, and break on the ſlighteſt exertion of the muſcles.

After a certain indeterminate period ſpent under the greateſt ſuffering, without ſleep, and without a moment's repoſe, all the functions ſoon become deranged, and the ſtrength is exhauſted; irregular fits of ſhivering, followed by heat and ſmall ſweats, take place, with obſtinate diarrhœa, and maraſmus which brings on death.

75. The teſticle, like the breaſt, is ſubject to the ſame phlegmonous mode of action; and like it, may afterwards paſs to the ſchirrhous ſtate. The epididymis, in particular, ſcarcely ever recovers its natural condition. In general no further inconvenience ariſes, except that there remains in the teſticle a little ſwelling, with a commencement of induration, both of which ſlowly increaſe, and nearly by an uniform progreſſion. The cord even ſwells, becomes hard, and acquires nodes, which extend towards the inguinal ring or even into the abdomen. At length, after a ſeries of phænomena analogous to the preceding, ſeveral ſmall ulcerations take place, which unite into one cancerous ulcer, with ſhooting pains, and hard, livid,

livid, projecting edges, often filled with varicoſe nodes. In this, as in the preceding caſe, it often happens that ſcirrhous or cancerous alterations take place in other parts, and particularly in the other teſticle.

76. We have already mentioned the ſwellings, accompanied by induration, which are often the reſult of different kinds of phlegmaſia, either acute or chronic. The anatomiſt meets with theſe tumours in almoſt all the organic ſyſtems, and eſpecially towards thoſe parts where the lymphatic ſyſtem or the white fibrous tiſſue is predominant. He finds them, in particular, in the lymphatic glands, and the other glandular organs; in different parts of the pneumo-gaſtric and genito-urinary organs; in the white articular tiſſues, &c. Theſe tumours are ſeldom confined to one point, being for the moſt part diſperſed throughout different organs.

All theſe tumours exhibit the perfect ſcirrhous ſtate, with reſpect to homogeneous ſtructure, colour, conſiſtence, &c.; and they are ſuſceptible of that peculiar mode of action which makes them paſs to the ſtate of cancer. Such is the origin of cancers in the pylorus and œſophagus, or in the pancreas, the meſenteric glands, at the extremity of the rectum, in the proſtate gland, at the neck of the bladder, &c.

Similar

Similar tumours ariſe in different parts of the uterus, and particularly at the orifice of the vagina and in the ovaria. They are always the reſult of an acute or more frequently of a chronic phlegmaſia, either in its mucous membrane, or in the ſero-fibrous tiſſue of its exterior tunics. In general, they are preceded, a long time before, by a leucorrhœan ſecretion, with a ſenſation of heat, either in the vulvo-uterine conduit, or in the whole hypogaſtric region, and for the moſt part by great irregularity in menſtruation. Theſe tumours, after being long indolent and ſtationary, often become cancerous, eſpecially towards the period when menſtruation ceaſes, and always with the ſymptoms before mentioned. When the cancer is ulcerous there iſſues from the vulva a fetid, browniſh fluid, accompanied ſometimes with pieces of ſcars or of fungous fleſh. The vagina itſelf becomes painful, and ulceration is ſometimes produced in it by the continual application of this irritating ſecretion; the lips of the vulva ſwell, and become turgid; the inguinal glands tumefy, and remain hard; the thighs as well as the legs contract alſo a ſoft flabby ſwelling. The ſame mode of irritation is propagated to the rectum, to the proſtate gland, and to the neck of the bladder; and is communicated ſometimes to a very great diſtance.

That which is peculiar to the white fibrous

tiſſues

tiſſues is to be conſidered alſo as the product of an analogous mode of action. Such are thoſe chronic ſwellings of the articulations, occaſioned either by a contuſion on the part, or by rheumatic phlogoſis. They follow a very ſlow progreſſive courſe, and at length arrive at a ſtate in which all the parts are converted into a maſs almoſt entirely homogeneous and albuminous. Theſe tumours, after remaining an indeterminate time almoſt ſtationary, and without pain, at leaſt very ſenſible, aſſume a more rapid increaſe, with inequalities on their ſurface, a greater or leſs ſenſation of heat, and violent ſhooting pains. The ſkin, interſperſed with veins, is diſtended, and becomes marbled with different colours, white and red, then violet or browniſh. It grows thin in ſome particular points, where the pain ſeems to be concentrated; and one or more apertures at length afford a paſſage to a fluid rarely puriform, for the moſt part thin and reddiſh, which in a few days becomes exceedingly fetid. Theſe tumours then begin to increaſe in a more evident manner; the pains become intolerable, eſpecially towards the evening and during the night, and the general ſtate of the patient tends directly to ſpeedy death.

The ſkin alſo is ſuſceptible of paſſing to the ſcirrhous and then to the cancerous ſtate, eſpecially towards the lips, the alæ of the noſe, and all the parts of the face. The diſeaſe generally begins

gins by a ſmall excreſcence or wart, which, after continuing a certain time in a ſtate of almoſt complete indolence, at length aſſumes the cancerous character, in conſequence of any irritation whatever: ſuch as repeated laceration by the nails, imperfect exciſion, the application of a cauſtic incapable of deſtroying the whole tumour on the firſt trial, &c. The tumour increaſes, and becomes painful, its ſummit exhibits a livid ulcer ſurrounded by hard and projecting edges, which increaſes with more rapidity as the pains are more violent. The ſwelling ſpreads in proportion as the ulceration deſtroys the parts; and the diſeaſe may ſpeedily extend over a very large ſurface, and penetrate even to the bones.

Three very diſtinct ſtages are obſerved in the general progreſs of a cancer.

1ſt. A hard round tumour, attended with little or no pain, the effect of a chronic or acute phlegmaſia, increaſes ſlowly, or remains ſtationary, &c. This is the ſcirrhous ſtate. It develops itſelf only in the different portions of the lymphatic and glandulous ſyſtem, and in the white fibrous organs. The interior part of it has always a reſemblance to concrete albumen.

2d. A new mode of action, which announces itſelf by tickling, heat, and ſhooting pains which return by paroxyſms, is then developed in the tumour. The tumour increaſes more rapidly, and exhibits

exhibits inequalities at its ſurface. The ſkin of the part becomes altered: the matter diſcharged when the tumour breaks is ſometimes puriform, oftener ſerous, reddiſh, and inodorous; but it ſoon acquires a brown or blackiſh colour, and is exceedingly fetid. The pains, however, increaſe with the ſize of the tumour; the ulcer becomes larger, and exhibits an unequal ſurface of a livid brown colour, with hard projecting edges which have the appearance of being torn, &c.

3d. After a certain period, ſometimes very ſhort and at others of ſeveral years, a manifeſt alteration is obſerved in the different functions; the appetite decreaſes, digeſtion becomes difficult, an obſtinate diarrhœa takes place, with a general decay, and every ſign of approaching death.

77. External cancers are frequently the conſequence of particular accidents, merely local; ſuch as contuſion, laceration, &c. Internal ones proceed from every circumſtance capable of developping a phlegmonous action in the glandulous organs and white fibrous parts. This affection is more common among women than among men.

The ſcirrhous or cancerous ſtate of the internal parts ariſes for the moſt part from a peculiar affection of the whole ſyſtem. That of the external parts, when it reſults from external irritation, is at firſt an alteration merely local. But even in this caſe,

caſe, the whole ſyſtem, at the end of a certain period, participates in the mode of irritation, which was at firſt fixed to one ſingle point.

Internal ſcirrhus or cancers, eſpecially when multiplied in different organs, are almoſt always accompanied with an effuſion of ſerous matter, either in the cells of the ſub-cutaneous tiſſue of the lower limbs, or in the large cavities.

Perfect ſchirrus, that is to ſay, hard, indolent and almoſt ſtationary, is rarely ſuſceptible of cure. An occult and ulcerated cancer is never cured ſpontaneouſly. Exciſion affords the only hope of ſafety, provided a cancerous diatheſis of too long ſtanding does not exiſt.

PHLEG-

PHLEGMASIÆ OF THE SKIN.

78. The ſkin of children, and particularly that of girls, often becomes covered in ſeveral parts with a *furfuraceous efflorescence*, which exiſts for a longer or ſhorter time. It is obſerved that the old laminæ, as they detach themſelves, are ſpeedily ſucceeded by new ones. Sometimes there is a ſlight itching, and for the moſt part the ſkin retains its natural colour, and ſeems only to be ſomewhat raiſed. This affection diſappears of itſelf, and rarely continues to the age of puberty. *Herpetic efflorescence.*

79. The ſkin of adults alſo becomes covered ſometimes with ſpots rough with furfuraceous ſcales having an edge or area ſomewhat elevated, of a reddiſh colour, dry or ſlightly moiſt, accompanied with itching, pricking, ardent heat, ſhooting pains, eſpecially towards the evening or night. When examined by a magnifying glaſs the ſkin at firſt appears covered with miliary puſtules, tranſparent at the ſummit, and ſurrounded by a red ring. On burſting, they diſcharge a liquid, which aſſuming the concrete form, produces the ſcaly ſtratum that firſt ſtrikes the eye.

This eruption is commonly compoſed of ſolitary or leſs diſtinct areolæ, which multiply by radiations, or extend to the neighbouring parts by excentric circles. In proportion as the old furfuraceous ſcales detach themſelves, other puſtules ariſe, and pour forth that excretion which produces new ſcales.

The part firſt affected remains ſmooth and ſhining, and ſometimes marbled with reddiſh ſpecks, circumſcribed by a furfuraceous and eryſipelatous ring. The ſkin never recovers its uſual colour and appearance till after a conſiderable time.

This form can hardly be ſeparated from that in which the ſkin ſlightly elevated, at firſt reddiſh, and then gray or white, exhibits a rugous ſurface full of cracks, pulverulent or ſomewhat humid. It is covered with thin, whitiſh, and ſemi-tranſparent ſcales, which fall off in abundance under the nails of the patient while ſcratching himſelf with eagerneſs, and which are ſpeedily ſucceeded by new ones.

This affection differs from the preceding only in the ſize of the furfuraceous ſcales. It appears in cluſters, ſometimes of conſiderable extent, either continued or with intermediate vacuities, which may every moment be filled up. Sometimes it confines itſelf to ſeveral points of the body; at others it covers the whole ſurface, in a more or leſs

leſs uniform manner. This affection, however, is different from the former in this reſpect, that its attack is not ſo ſudden, and that its progreſs is ſlower and more obſtinate. *Furfuraceous ſcaly herpes.*

In other individuals, there firſt appears on the ſkin a hard, rugous, and rough puſtule; the epidermis riſes up, and pours forth a drop of a whitiſh liquid, and afterwards a reddiſh, brown, and ſometimes bloody matter. The ſmall ulcer ſoon becomes covered with a yellowiſh aſh-coloured, brown, or blackiſh cruſt, which greatly exceeds its diameter, and gradually continues to increaſe. Theſe puſtules are ſeldom ſingle, being in general more or leſs numerous, and diſſeminated over different parts; thoſe near each other unite into one large ſcab, which may be ſometimes from ſix to twelve lines in thickneſs; theſe ſcabs are rough, and exhibit fiſſures moiſtened with a reddiſh or bloody matter. The ſkin around them appears ſwelled, hard, red, and full of cracks. The patient experiences an inſupportable itching, and the ſcabs which drop or which are ſcratched off by the nails are ſoon ſucceeded by new ones. The diſeaſe gradually extends, and ſometimes makes its appearance ſuddenly in diſtant parts. Men have been ſeen entirely covered by theſe ſcabs, with deep fiſſures, and bleeding ulcers, alternately

tormented with thirſt, itching, and ardent heat, exceedingly painful. *Puſtulous ſcabby herpes.*

80. All theſe affections, but particularly the laſt, terminate ſometimes in real ulcers; ſometimes the ſkin ſeems merely to be excoriated, without its dermoid tiſſue being ſenſibly altered. Sometimes it is very thick, hard, and eryſipelatous all around; the ulceration ſeems to have corroded its whole ſubſtance, and to have penetrated even to the muſcles. Theſe ſmall ulcers are commonly united into large ſores, which diſcharge a thin ſerous liquid. Sometimes they deſtroy the whole ſkin of the fore-arm, of one ſide of the forehead, face, &c. nearly in the ſame manner as a cancer of the ſkin.

Theſe three principal kinds include, between them, an indefinite number of varieties, from the ſimple furfuraceous efflorescence, which is attended with no other inconvenience than that of injuring the regularity of a fine countenance, to that ſtate in which almoſt the whole ſurface of the ſkin covered with ſcales or yellowiſh cruſts, bleeding rhagades, pale and fetid ulcers, exhibits the moſt hideous ſpectacle, and occaſions a continual heat, intolerable itching, and ſevere ſmarting pain.

This affection, in all theſe caſes, conſiſts in large puſtules, inſulated or exceedingly ſmall, very numerous, and formed into cluſters; tranſparent

or

or whitiſh at the ſummit and red at the baſe, with a more or leſs apparent exudation of matter, which hardens into furfuraceous ſcales or ſcabs. The herpetic area gradually extends; the eruption manifeſts itſelf in different remote parts at the ſame time, exhibiting a ſingular mobility, and alternations of calmneſs and exacerbation: the itching is more violent at the periods of digeſtion and of ſleep, during hot, damp weather, &c.

This affection develops itſelf, for the moſt part, in the ſpring; becomes milder during the heats of ſummer, and diſappears in dry winters. It rarely comes on in youth, it is more frequent and more obſtinate in adults, and particularly ſo in old age, when its exiſtence ſeems to be neceſſary to health.

Obſervation has ſhown that the following circumſtances concur, in a particular manner, to favour the development of herpetic eruptions: hereditary tranſmiſſion, perhaps immediate contact; habitual dirtineſs; the uſe of too abundant nouriſhment, or nouriſhment of a bad quality; penury and want; the long continued or permanent influence of a cloudy atmoſphere; reſidence in low maritime countries, inundated, or ſurrounded by thick foreſts; melancholy moral affections, &c.

An intimate relation is often eſtabliſhed between herpetic affections and a variety of other diſeaſes; ſuch as catarrhal, rheumatic, and gouty affections; organic or merely nervous affections,

which take place in various parts of almoſt all the different ſyſtems of organs. Sometimes the commencement of theſe diſeaſes coincides with the diſappearance of herpetic affections; at other times herpetic affections begin to manifeſt themſelves when theſe diſeaſes terminate.

In general, catarrhal affections are thoſe which moſt commonly come on alternately with diſeaſes of the ſkin, on account of the great relation which exiſts between the internal and the external ſurfaces.

An herpetic eruption, or eruption of an herpetic nature, may be occaſioned by the particular action of certain internal organs, or by the derangement of ſome functions: hence ſimilar eruptions often take place after the uſe of ſome particular kinds of drink or aliment.

The ſpontaneous development of an herpetic eruption may prevent an internal derangement, or contribute to moderate or to cure it. This is a reſult analogous to that obtained by friction, flagellation, urtication, veſicatories, the cautery, or any kind of irritation in the ſkin or in another organ. There is no doubt that the ſudden ſuppreſſion of an herpetic eruption may ſometimes become fatal, by the production of internal alteration.

Sudden ſuppreſſion of habitual herpetic irritation may often produce derangements in ſome of the internal organs. The vital action which maintains

tains a phænomenon of health or diſeaſe, may be compared to *produced motion*, which always requires to be employed in toto. When this action is interrupted in one part, it goes to conſume itſelf in that organ which is more diſpoſed to receive it, and to correſpond to it. This effect is what ought to be expected from all ſudden changes which take place in the organization. It is indeed obſerved, that all diſeaſes which cure themſelves purſue for the moſt part an inſenſible courſe, and ſo much the ſlower as they are of longer ſtanding. When they aſſume a more rapid progreſs, they always expoſe the patient to a certain danger, which he eſcapes only in conſequence of a thouſand ſingular movements, which ariſe from the employment of the interrupted vital action.

A wide diſtinction, however, ought to be made between an herpetic affection, which forms one or two eruptions, often with great intenſity, a rapid progreſs, and a great many acute ſymptoms, and that which by a long duration or frequent returns has acquired, through habit, a great influence on the whole conſtitution. In the firſt caſe a cure may be ſpeedily effected without any danger, but the ſecond may be attended with a conſiderable degree of it.

The moſt proper means to be employed in the treatment of herpes are: 1ſt, Thoſe which tend to remove all circumſtances capable of contribut-

ing towards the development, maintenance, and renewal of the ſpecific irritation; 2d, Thoſe which produce an increaſe of action in any of the organs, and particularly in the gaſtric ſyſtem, in order to diminiſh gradually, in this manner, the mode of action eſtabliſhed at the ſkin.

In general, there will be no inconvenience in attacking ſuddenly a recent herpetic affection; but this proceſs is more dangerous, and requires more method and caution, when the affection is of long ſtanding; when it evidently coincides with ſome organic læſions, ſome natural functions or acquired habits.

81. The ſkin of the head, and particularly that of the ſcalp, becomes ſometimes the ſeat of an affection very ſimilar to herpes. It belongs almoſt excluſively to the period of infancy, and rarely manifeſts itſelf after the age of puberty. This diſeaſe exhibits ſuch a variety of ſhades, and has been obſerved with ſo little preciſion, that it is ſtill difficult to determine under what principal heads its numerous varieties ought to be claſſed.

It ſometimes appears under the form of ſcaly furfuraceous cruſts, of greater or leſs extent, and very numerous. Sometimes the ſkin below them exhibits no alteration; and this ſlight deſquamation, though pruriginous, diſappears generally of itſelf, if proper attention is paid to the cleanlineſs of

of the patient. At other times, the ſkin ſlightly elevated has a reddiſh appearance as if excoriated, and diſcharges a white or reddiſh ſerous matter, which reproduces the ſcales in proportion as they are detached. The itching is then more violent: the diſeaſe begins by a miliary eruption, ſcarcely perceptible, with redneſs, a ſort of ardor and ſevere ſmarting. Expoſure to the ſcorching heat of the ſun, and the application of acrid or irritating things, often contribute to its development. It ſeldom happens that it is very obſtinate.

At other times it begins by puſtules formed into groups, confined to ſome parts of the head, red, and exceedingly pruriginous: when opened they diſcharge a liquid ſomewhat thick and viſcid. This liquid is gray, yellow, or browniſh, and thickens into cruſts of the ſame colours. Theſe cruſts are moiſt, at leaſt towards their edges, or entirely dry; they detach themſelves ſpontaneouſly in ſcales, or by being ſcratched, and are ſpeedily ſucceeded by others. After they have been completely removed the ſkin appears ſmooth, ſhining, and red; tumefied, and as it were ſoft like paſte; ſometimes it is ſlightly excoriated, and exudes a matter ſimilar to the former. The irritation often ſpreads to the neighbouring parts, with an eryſipelatous redneſs; red ſpots are obſerved, and even cruſty puſtules, on the forehead, in different parts of the face, and particularly around

around the lips, on the chin, on the alæ of the noſe, &c.

To this form we muſt refer the ulcerous exudation with which the heads of children are often covered, during the firſt years of life, and eſpecially of thoſe who are over-fed, loaded with fat, deprived of exerciſe, and too warmly clothed. This affection attacks in preference the crown of the head, the upper part of the forehead, the circumference of the ears, and extends ſometimes even to the arms. We muſt refer to the ſame claſs thoſe ſcabby exudations which break out in children tormented with vermin, and which diſappear when the deſtruction of the vermin removes the cauſe of habitual irritation and inſupportable itching.

In the third caſe, there appear even in the middle of the tiſſue of the ſkin ſmall lenticular or piſiform tumours, whitiſh at the ſummit, and which acquire a ſize and form exceedingly variable. When opened they diſcharge a thick matter of a yellowiſh white colour, incloſed in ſmall cavities. The odour of this excretion is highly fetid. The child experiences a violent itching, which is ſpeedily followed by acute pain. At length the ſkin becomes covered with dry or moiſt ſcabs, either large or ſmall, unequal, and ſometimes of conſiderable thickneſs; alveolar ulcers, which ſometimes contain red fleſhy granulations; deep

furrows or crevices, in which is found a thick matter; and then new puſtules, the ſource of new ulcerations. At times the whole ſkin of the head ſwells, and fever, delirium, &c. take place.

The affection ſpeedily ſpreads to the bulbs of the hair, which become withered; the hair aſſumes the whiteneſs and tenuity of ſoft flax, and ſometimes drops off entirely, never to grow again. This affection proceeds even to the bones, which become carious; at laſt the lymphatic glands ſwell, towards the back part of the head, the neck, and the arm-pits.

The peculiar ſeat of this affection is in the ſcalp: it is exceedingly obſtinate, and reſiſts moſt of thoſe means which remove the preceding affections. *Tinea.*

Tinea ſeems to be, for the moſt part, an affection merely local. Sometimes, however, ſymptoms of the ſame kind appear ſimultaneouſly in other parts; ſuch as ſcabby excoriations around the mouth and noſe, on the cheeks, the chin, and around the ears; rugoſities or warts on the face, a ſwelling and eating ſore on the edge of the eyelids, and different chronic affections: it often accompanies the ſcrophula, rachitis, phthiſis, &c.

The principal ſeat of the malady ſeems to be in the adipoſe tiſſue of the ſkin. According to the anatomical reſearches of Murray, it does not appear

pear that it exiſts primitively in the bulbs of the hair.

The only difference between this affection and herpes is, that its ſeat is different; and it is to be remarked that it takes place at an age when herpes rarely appears, and at which all derangements ſhow themſelves towards the head.

When the diſeaſe is merely local and of ſhort ſtanding, it may be removed by attention to cleanlineſs, and by the uſe of ſome oleo-mucilaginous applications; but if it appears to reſiſt theſe, it will be neceſſary to employ ſubſtances capable of exciting in the part a mode of action different from that which conſtitutes the diſeaſe, and which is often perpetuated by the force of habit. On this account veſicatories, alkaline ſolutions, and ſolutions of metallic ſalts, plaſters made with the oxides of mercury, and antimony, &c. are often ſucceſsful. Tinea is cured alſo by tearing out the bulbs of the hair; which occaſions a very ſtrong local irritation: but it is always poſſible to obtain a ſimilar effect by means leſs painful and more methodical than the application of a cap lined with pitch; which beſides is not infallible.

When the diſeaſe is of long ſtanding, and combined with affections of the ſkin, of the glands, and of other organs, the treatment muſt be longer continued. Apprehenſions muſt always be entertained

tained of checking too abruptly an habitual mode of action, and recourſe muſt be had to the general means pointed out in the method of treating herpes.

82. There is ſtill another cutaneous affection, exceedingly rare at preſent, but which is here noticed in order to ſhow to what kind of diſeaſe the ſkin may become ſubject by a concurrence of particular circumſtances.

This affection commences by rough tubercles, with cracks in the ſkin, which commonly appear in the face; the patient ſoon experiences a general heavineſs, with great indolence, and irreſiſtible drowſineſs. At a later period, the breath becomes exceedingly fetid, the urine is thick and turbid, and ſymptoms of ſatyriaſis manifeſt themſelves.

In the courſe of time more tubercles appear, and aſſume a greater thickneſs; the cracks in the ſkin become deeper, and the hair ſoon drops off.

As the diſeaſe advances, the patient experiences a violent itching in the toes, the knees, and ſometimes even in the face; the cheeks then become red and ſwelled; the eyes are dull, and hollow; the ſkin of the forehead acquires more thickneſs, and exhibits deep wrinkles; blackiſh tubercles appear in the alæ of the noſe; the lips ſwell, and the whole ſkin ſoon becomes thicker.

At a more advanced ſtage of the diſeaſe the tubercles

bercles of the cheeks, of the chin, fingers, &c. exhibit ſucceſſive ulcerations, which become deep, extend, and at length terminate in the loſs of certain portions of the limbs. In this ſtate the functions ſoon become deranged, and the patient falls into a ſlow and gradual decay, which at length terminates in death. *Elephantiaſis, red leproſy of Cayenne.*

This diſeaſe takes place more readily in warm damp countries; it was formerly common in part of the Eaſt and in Greece; it prevailed alſo in Europe, ſome centuries ago; and is now met with in ſeveral countries of America. The circumſtances which ſeem to contribute moſt powerfully to produce it are: the action of an atmoſphere habitually warm and damp on ignorant and miſerable perſons confined in gloomy and low habitations; dirtineſs in regard to clothing; food of a bad quality, &c. Its development may be favoured alſo by cohabitation with thoſe affected with leproſy.

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83. We muſt here add another diſeaſe of the ſkin, which has this peculiar property, that it can be tranſmitted by immediate contact, either of the perſons affected with it, or of clothes or other articles they have touched. This malady is found, in particular, among people badly clothed, who live poorly, and who reſide in confined damp and obſcure

obſcure habitations; in priſons, hoſpitals; and in countries where, in conſequence of the rude ſtate of civilization, little or no attention is paid to cleanlineſs, &c.

Its development, which for the moſt part is gradual, takes place in every part of the body, the face excepted. It generally begins in the hands, in the interſtices of the fingers, and at the bend of the wriſts. It announces itſelf by a ſlight itching, which gradually increaſes eſpecially towards evening, and in the night, by the action of heat, and of any ſtimulant. Puſtules, either ſingle or collected in ſpots, ſmaller than a grain of millet, or of a diameter ſomewhat greater than that of a lentil, and nearly of the colour of the ſkin, ſoon after make their appearance; they are round, exceedingly hard at the root, rough to the touch, pyramidal, and have a veſicular and cryſtalline ſummit. When the veſicle breaks ſpontaneouſly, or is lacerated by the nails, it diſcharges a whitiſh ſerous matter, and ſometimes a little blood, which concretes into a ſmall, dry, brown ſcab. The itching ſpreads, and puſtules ſoon ariſe in other parts of the body. In the large puſtules the ſummit remains humid, and becomes covered with a large cruſt, under which a ſerous matter, ſometimes turbid and puriform, is accumulated. Several puſtules, which were at firſt diſtinct, unite together and form one ſcab of greater extent, and ſometimes a large ulcer.

The

The miliary puſtules are rarely confounded. At length the intervals between the ſcabby or ſtill cryſtalline puſtules are ſpeedily filled with rents made by the nails. The fiſſures, which are ſcabby and rough, would ſoon diſappear were it poſſible to reſiſt the itching.

The itch is often not ſo much a diſeaſe as an inconvenience, and hardy ruſtics, accuſtomed to pain and labour, live under it in a ſtate of indifference. However, when it commences with much impetuoſity, and when it acquires by length of time a high degree of energy, thoſe affected with it often paſs whole nights without ſleep, inceſſantly tormented by a dreadful and as it were convulſive itching. When this ſtate continues for a long time, its effects diffuſed throughout the whole conſtitution may produce a general derangement, and give riſe to chronic diſeaſes often exceedingly ſevere.

In ſome caſes, an itchy eruption like many others has been ſeen to determine the cure of organic diſeaſes, or diſeaſes purely nervous. Inoculation for the itch, under this point of view, has even been much in vogue. This practice, though founded on a falſe theory, has however often proved very efficacious. It may indeed be readily conceived how much advantage might be derived from an irritation of the ſkin ſo powerful and ſo extenſive. But we muſt not conſider as itchy all thoſe ſpontaneous

ſpontaneous eruptions, the manifeſt benefits of which have cauſed this practice to be adopted. At the end of fevers, and particularly thoſe of the intermittent kind, of catarrhal affections, and of various chronic phlegmaſiæ, the ſkin often becomes covered with a general eruption, ſometimes attended with itching; but it is always diſtinguiſhed from real itch by its rapid and univerſal eruption; by the form of the puſtules or papillæ; by its being ſpontaneouſly cured, and by its being free from any contagious quality.

The itch, when once eſtabliſhed, is ſeldom cured of itſelf. Like all chronic diſeaſes, and particularly thoſe of the ſkin, it has its alternate periods of abatement and exacerbation, according to the ſeaſons, temperature, and times of the day, the quality of the food and drink, &c. It may even diſappear entirely by the ſudden development of an acute diſeaſe, and re-appear after its termination: if the acute diſeaſe be of long duration, it perhaps may never re-appear at all. But, in general, real itch is never cured but by the application of ſome means which exerciſe an action on the puſtules themſelves.

A ſimple, recent, and merely local itch may be ſuddenly checked by the deſtruction of the firſt puſtules which begin to appear, or by friction with irritating ointments; ſuch as that made of ſulphur or mercury combined with hog's lard, and with

decoctions of bitter plants; as tobacco, elicampane, patience-dock, lead-wort, &c.

But when the diſeaſe is of very long ſtanding, it may be dangerous, as in every other caſe, to check abruptly an inveterate habit; and the treatment muſt be continued for a long time, without interruption, and be conducted with great care.

Whatever be the remedy employed in the treatment of the itch, it is not uncommon, after friction has been employed for a ſhort time, to ſee puſtules ariſe which exhibit no characters of the itch. This is obſerved, in particular, on perſons who have a delicate ſkin. This exanthema, excited by the irritating friction alone, is often miſtaken for a new eruption of the itch, and cauſes the treatment to be prolonged; but it yields only to the application of means calculated to diminiſh the irritation of the ſkin; ſuch as baths, oleo-mucilaginous ointments, fine linen, &c.

After the cure of an inveterate itch, the patient ſometimes remains ſubject to puſtulous eruptions, eſpecially in ſpring and autumn. Theſe exanthemata, which are exceedingly variable, never exhibit the character of the itch; are not contagious, and diſappear ſpontaneouſly. It is not improbable that theſe conſecutive eruptions have induced noſologiſts to admit metaſtatic itch, critical itch, &c.

An inſect of the nature of the *acari* has been obſerved in the veſicle of the itch, or at leaſt very near

near it. Naturaliſts, who have aſſigned to it a ſpecific character, vary in their deſcriptions; ſo that there may be ſeveral kinds of *acarus exulcerans*.

But however this may be, the development of the itch and the irritation it produces on the ſkin cannot be aſcribed to the preſence of theſe animalcula, ſince they are not found in all the varieties of the itch; and when they exiſt, it is probable that it is merely becauſe the place is ſuited to them, or becauſe they are found naturally in the itchy ſeroſity, as other animalcula are in the ſperm, the blood, &c.

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84. We now come to the laſt order of Phlegmaſiæ, which aſſume their ſpecial character merely as a conſequence of different kinds of phlegmaſiæ. The individuals whom they attack, in preference, may be arranged into three claſſes:

1ſt. Thoſe who have a delicate conſtitution, ſlender limbs, a high degree of nervous ſenſibility and great vivacity, and who are ſubject to hypochondriac affections or hyſteric melancholy; a peculiar weakneſs in the pulmonary organ, announced by a feeble acute voice; a ſhortneſs of breath; frequent conſtriction in the bronchiæ, the trachea, and the larynx; thoſe who experience frequent ſpitting of blood, who have a ſtrong propenſity to venereal pleaſures, maſturbation, &c.

2d. Thoſe who from infancy exhibit ſtriking

ſymptoms of ſcrophula and rachitis, and who at the period of puberty experience an habitual difficulty of reſpiration, a dry, irregular cough which daily becomes more troubleſome, without pain in the breaſt, and attended with a ſtriking mitigation by the ſpontaneous eruption of affections of the ſkin, or of the exterior glands; thoſe who with theſe characters have always a pale complexion, a ſibilating voice, and red cheeks.

3d. Thoſe who exhibit a catarrhal conſtitution, with frequent colds, who have a delicate, ſmooth, white ſkin, who experience an habitual heavineſs, indolence, &c.

Theſe three kinds of original diſpoſition ſeem often to have been the effects of hereditary tranſmiſſion.

The influence of theſe diſpoſitions is increaſed alſo: by ſpeedy and premature growth; a vicious conformation, particularly of the trunk, as a narrow compreſſed cheſt, projecting ſhoulders, long ſlender neck: it is favoured by forced ſinging, the too great uſe of wind inſtruments, the habitual inſpiration of an atmoſphere charged with pulverulent matters, and particularly metallic ſubſtances.

During the firſt period, variable in duration and ſometimes very long, a few ſlight and obſcure ſymptoms only are obſerved towards the breaſt; a difficulty of lying on one or the other ſide; a ſhortneſs of reſpiration, attended with more difficulty in

certain

certain positions; a confined sensation in the breast; a pungent pain when an effort is made to cough; a strong inspiration; a dry gentle cough, which recurs at intervals and becomes habitual, with a little oppression and hoarseness, and sometimes with a spumous expectoration which gives relief: respiration is accelerated by the least exercise; symptoms analogous to those of catarrh take place from the slightest cause; during some days repeated fits of shivering, a great sensation of cold, a strong and sonorous cough, are experienced, with a pain and heat in the breast; expectoration of an aqueous, saline, or sweetish matter, loss of appetite, general lassitude, and fever towards evening. Sometimes the patient experiences a pleuritic stitch; the pulse is hard and close; the face becomes red, the eyes humid, and the oppression and cough are followed by bloody sputa. At other times the patient experiences a sensation of heaviness and uneasiness, a burning pain in the breast, and particularly behind the sternum; oppression and febrile symptoms more or less striking. The pulse is full, sometimes small, always hard and throbbing; a titillation is experienced towards the larynx, which occasions a slight cough; sanguinolent sputa, or a greater or less abundant eructation of florid and spumous blood, with a kind of sibilating ebullition in the trachea, are observed.

After ſeveral paroxyſms of the ſame kind, the cough becomes ſtronger, eſpecially towards evening and in the night; it is generally ſonorous and irregular; the voice is hoarſe, weak, and ſharp; and the oppreſſion becomes greater, particularly after meals.

At this ſecond period, almoſt all the functions begin to exhibit ſymptoms of derangement; the patient becomes ſleepleſs, the appetite is loſt, and an obſtinate conſtipation takes place; the pulſe is habitually frequent, with an acceleration towards night; the ſkin is hot and arid, particularly in the palms of the hands and the ſoles of the feet; the cheeks acquire a bright red colour, and the urine depoſits a furfuraceous and reddiſh ſediment.

All theſe diſorders gradually increaſe, and irregular exacerbations take place; expectoration is then ſuppreſſed; an acute pain is experienced in ſome parts of the breaſt, with a continual heat. The ſputa exhibit great variation in their colour, ſmell, and conſiſtence; ſometimes they preſent ſtriæ of blood, membranous films, and ſmall globular bodies containing a matter more or leſs thick or calculous.

At length, at a third period, the fever becomes continued, and the pulſe ſmall and cloſe. Towards noon and evening it increaſes, and is accompanied with ſhivering; the ſkin is hot and dry,

dry, the oppreſſion is more fatiguing, and red ſpots appear on the cheeks. The patient experiences a ſtriking alleviation at night and in the morning, with tranquil ſleep and agreeable dreams.

During the ſlow progreſs of the diſeaſe it is obſerved that the ſweat becomes greaſy, clammy and fetid, univerſal or confined to the breaſt; the urine is highly coloured, depoſits a great deal of ſediment, and is covered with an oily pellicle. The expectoration exhibits characters very much varied; it is of an aſh or blackiſh colour, viſcid or in detached flakes, homogeneous or differently mixed. A frequent diarrhœa, which ſeems to come on alternately with the ſweats, ſoon takes place. The patient then experiences a rapid conſumption. The eyes become hollow and bright; the noſe ſharp, pointed and red; the viſage is pale, livid, and meagre, and ſometimes ſwelled. All the muſcles waſte away, the breaſts ſink down completely; the projection of the ribs, the retraction of the hypochondria, and the depreſſion of the ſides of the abdomen, are very remarkable; and the abdominal arteries exhibit at intervals convulſive throbs, which are often exceedingly ſtrong.

Sometimes the legs ſwell, the ſhoulders in general are remarkably prominent, the fingers become ſlender, the articulations project, and the nails are long and hooked; the hair frequently

drops off. At this period exceſſive excretions of different kinds take place: ſuch as ſalivation, diabetic flux, diarrhœa, purulent ſputa, &c. A great heat is experienced in the tonſils and throat, with redneſs, great ſenſibility, and aphthæ in the mouth and on the tongue.

The patient, at length, falls into a ſort of idiotiſm; forms plans which he continually alters; becomes peeviſh, capricious, and whimſical; and death terminates his exiſtence, for the moſt part at an unexpected moment, after an hæmoptyſis or ſudden movement, after ſome days of ſlight delirium, and ſometimes when in the perfect uſe of his ſenſes.

On opening the body the pulmonary tiſſue is found to be deſtroyed throughout a greater or leſs extent, by a large ulcer, the ſides of which are frequently hard and tuberculous. This ulcer for the moſt part occupies the upper and poſterior part of the lungs; an effuſion of purulent matter is found in the cavity of the thorax; and in the ſubſtance of the lungs, and among the bronchial veſicles, pus, tubercles more or leſs compact, hard ſpherical bodies, the ſize of which is exceedingly various. The ſmalleſt are whitiſh, ſmooth, and as it were cartilaginous; thoſe of the middle ſize contain a purulent matter; the largeſt are in general hollow, and their moiſt cavities communi-

cate

cate with each other, and with thoſe of the bronchiæ. Sometimes the lungs appear compact, and corroded like wood gnawed by worms.

The diſeaſe generally makes its appearance between the age of fifteen and thirty-five, a period at which the predominance of the vital energy ſeems to proceed from the head towards the breaſt.

The progreſs of this affection, for the moſt part, is very tedious; it continues ſometimes ſeveral years, with very ſtriking intervals of remiſſion during the firſt periods. A variety of circumſtances may contribute to render it more or leſs rapid: it is accelerated by the impreſſion of cold often repeated, deviations from regimen, exceſſive fatigue, venereal pleaſures, or melancholy moral affections; fevers, or other acute diſeaſes. That which exhibits the ſcrophulous character is, in general, ſlower than that produced by exceſs of ſenſibility in the lungs, or by repeated attacks of catarrh, eſpecially when ſtrong fits of hæmoptyſis are combined with it.

The diſeaſe, in general, is compoſed of ſeveral paroxyſms, which depend on the mode of action ſucceſſively eſtabliſhed in one or more tubercles; and its progreſs is the more rapid as the number of tubercles which enter into action is greater.

Phthiſis.

The

The mode of treatment muſt be varied according to the circumſtances which ſeem to concur moſt towards the development of the diſeaſe, and to its eſſential character. But the following general means ought to form a part of it; the patient muſt be placed in ſuch a ſituation as to enable him to breathe that atmoſphere beſt ſuited to the weak or diſeaſed ſtate of his lungs; the ſtrength muſt be maintained by wholeſome nouriſhment, varied according to the difference of taſtes; ſubſtances in the ſtate of gas or vapour, known by practice to be ſalutary, and which act directly on the part affected, ſhould be employed; ſinapiſms and veſicatories ought to be applied to the breaſt, in order to maintain there a point of irritation, which may diminiſh that in the pulmonary organ; and courage and hope ſhould be excited by varied amuſements, according to the taſte and circumſtances of the patient, &c.*

Phthiſis cannot be communicated by contact, or by the uſe of articles which have been employed by a phthiſicky patient, even when in the laſt ſtage of the malady; and thoſe apprehenſions which have induced ſome to deſtroy the clothes, furniture, and other effects of perſons who die of this diſeaſe, reſt on no foundation. But it is not prudent, and

* See the Report *Sur la Médecine Pneumatique* in the *Journ. de Médecine, ventoſe, an. 9.*

particularly

particularly for thoſe who have a weak breaſt, to remain long too near phthiſicky patients when the diſeaſe is far advanced.

All acute affections of the lungs, ſuch as pneumony, pleuriſy, catarrh of the bronchiæ, or wounds of the breaſt, may terminate in phthiſis.

FEVERS.

FEVERS.

ERUPTIVE FEVERS.

85. The different kinds of phlegmaſiæ, the hiſtory of which has here been given, always exhibit, in one fixed and determinate point of irritation, the immediate cauſe, or rather the origin, of all the phænomena, whether local or general.

In the following order of affections, a ſeries of general ſymptoms are ſeen to make their appearance before any indication of the cutaneous phlegmaſia which ought to furniſh the ſpecific character of the diſeaſe.

86. The firſt affection which occurs, as forming a continuation of the phlegmaſiæ, announces itſelf by a general indiſpoſition of longer or ſhorter duration. The patient then experiences a ſenſation of cold, ſhivering more or leſs violent, followed by an univerſal heat, with an acceleration of the pulſe, pain in the head, thirſt, painful conſtriction of the epigaſtrium, laſſitude, ſenſation in the loins and in the limbs as if bruiſed.

When

When the local affection is about to develop itſelf in the face, as for the moſt part happens, the patient is attacked by a violent cephalalgia, attended with great heavineſs of the head, drowſineſs, and ſometimes delirium. Theſe ſymptoms generally become worſe towards evening, and go on gradually increaſing till the ſecond or third day.

After the firſt period, the patient experiences, towards ſome point of the ſkin, but for the moſt part in the face, a painful ſenſation of pricking, with tenſion and ardent heat; the part becomes ſwelled, aſſumes a red or a roſe colour, inclining ſometimes to yellow, which diſappears by the momentary preſſure of the finger, but when the finger is removed ſpeedily re-appears. The ſwelling and redneſs extend irregularly to the neighbouring parts, with acute pain which has a great reſemblance to that of burning.

The fever remains, or even increaſes with the local affection, which progreſſively extends, or which makes its appearance in very diſtant parts. It often overſpreads the whole face, and even the whole extent of the head. The ſwelling continues for ſome time after the redneſs and heat have diſappeared. The whole viſage ſwells, and the tumefied eye-lids entirely cover the eyes.

At an earlier or later period veſicles, containing a ſerous matter, ariſe. Under theſe veſicles the

ſkin

ſkin ſometimes appears brown, livid, or blackiſh; at other times it is attacked by gangrene. It often happens alſo that the irritation is communicated to the ſub-cutaneous cellular tiſſue, and gives riſe to abſceſſes: in the face they are generally ſmall, and appear towards the eye-lids. Sometimes theſe abſceſſes are ſuperficial, but exceedingly large, and diſſect in ſome meaſure the whole ſkin, as is frequently the caſe in the legs: the pus is then more viſcous, of a yellowiſh or browniſh gray colour, and the fleſh appears flabby and diſcoloured.

At the end of a certain time, but in general towards the eighth or tenth day after the eruption, the local and general ſymptoms abate; health is re-eſtabliſhed, and the epidermis drops off in ſmall ſcales from almoſt every place which experienced a certain degree of ſwelling. *Eryſipelas.*

This affection is remarkable for its mobility; it frequently diſappears, and a viſceral affection takes place, at the ſame time, particularly in the mucous membranes.

It is very rare during eryſipelas that the gaſtric ſyſtem is not deranged. On the commencement of the diſeaſe a bitterneſs, for the moſt part, is experienced in the mouth; the tongue becomes covered with a yellowiſh cruſt; and the patient complains of loathing, nauſea, bilious vomiting, and great ſenſibility towards the epigaſtrium.

In

In all these cases emetics and gentle purgatives generally remove the disease, or contribute to render it milder.

It is not uncommon to see the disease in the middle of its progress assume a malignant character; this is more particularly the case in feeble or exhausted individuals, and in old persons. A series of phænomena, which indicates derangement and weakness of the nervous action, then takes place: such as drowsiness, delirium, prostration of strength, subsultus tendinum, small pulse, petechial eruptions, gangrenous spots, &c.: all these symptoms evidently announce a fatal termination. In this case vesicatories and other stimulants may be of use.

When the affection is very acute, without gastric or adynamic complication, it may be proper to weaken it by bleeding, by abundant aqueous beverages, and by gentle laxatives. In erysipelas of the face, it is of importance that the patient's head should be kept elevated: when there is neither abscess, nor ulcerations, &c. the greater part of the topics employed are useless.

Erysipelas appears to be epidemic only when it prevails in combination with catarrhal affections which exhibit that character; it often recurs sometimes in the same individual, and readily acquires a sort of periodicity.

According to this view, erysipelas appears as an

eſſential fever, which always accompanies a phlegmaſia of the ſkin; but under many peculiar circumſtances a ſimilar phlegmaſia may take place without any antecedent fever, merely by the application of irritating ſubſtances to the ſkin: ſuch as fire, boiling water, the ſtinging of ſome inſects, a ſlight wound, &c.

87. We muſt arrange alſo in this claſs an affection, ſometimes very acute and painful, which ſeems to participate of eryſipelas and herpes. Its attack is ſuddenly announced by acute pains, with or without fever; the affected part appears as if burnt, and becomes covered with very ſmall whitiſh veſicles, rough to the touch, and having round their baſe a red ſhining circle. Theſe veſicles form themſelves into cluſters ſeparated and incloſed by a reddiſh ring; they occaſion a ſenſation of pricking or ſhooting pains; and after deſquamation there remains in the whole part an itching more or leſs violent. The eruption, for the moſt part, occupies the abdomen, flanks and loins in the form of a *girdle*. *Zona* (*the ſhingles*).

88. The diſeaſe of which we are now about to give the hiſtory is almoſt always epidemical; it appears moſt frequently in autumn, during winter, and in the ſpring. It is obſerved oftenеſt among children, women in the indigent claſs, and perſons who

who reſide in damp places: in general, it never affects the ſame individual more than once.

This affection commences with all the ſymptoms of an acute fever; the patient ſometimes experiences a pain in the epigaſtrium, and for the moſt part an uneaſy ſenſation in the throat, with a redneſs of the tongue and gullet, and aphthous excoriations: the fever exhibits an almoſt conſtant exacerbation towards evening and night.

Between the ſecond and fourth day an eruption takes place of broad, flat, red ſpots, ſcarcely elevated above the ſkin, and often pruriginous. Theſe ſpots aſſume a darker colour, and gradually extend from the face to the neck, the breaſt, the arms, the trunk, and then to the inferior limbs; and at length cover the whole ſkin, ſo as to give it a crimſon colour. The ſkin becomes white when preſſed by the finger, but immediately reſumes its redneſs.

The febrile ſymptoms rarely decreaſe during the eruption: the colour of the ſkin grows darker; the feet and hands become ſwelled, ſtiff, and painful; the face and eye-lids often ſwell alſo.

Towards the ſixth day the redneſs of the ſkin becomes fainter, according to the ſame order as that in which it increaſed. All the febrile ſymptoms gradually diſappear, and the pain in the throat ſubſides. The epidermis drops off in ſmall furfuraceous ſcales, from the face, the neck, and

the breaſt, and in larger pieces from the feet and hands.

Sometimes, after the termination of this diſeaſe, about the fifteenth day or even later, the patient, eſpecially if he has been expoſed to cold, falls into a ſort of languor; the urine becomes ſmall in quantity, thick, full of ſediment, and reddiſh; the face and eye-lids tumefy; a whitiſh ſoft ſwelling extends to every part of the body; and a ſerous matter is ſometimes effuſed into the peritonæal cavity or into the thorax.

This affection, in general, exhibits a rapid but mild progreſs; in ſome caſes the pain in the throat becomes ſo intenſe, that it alone ought to engage the whole attention of the phyſician, and may exhibit all the phænomena of angina.

Like eryſipelas, this affection begins ſometimes with all the characters of derangement in the gaſtric ſyſtem. In this caſe, an emetic often brings the diſeaſe to a ſtate of ſimplicity, and renders its progreſs eaſier.

Sometimes the affection, at the commencement, exhibits all thoſe ſymptons which produce derangement and weakneſs of the nervous action, as we have ſeen in ſome caſes of eryſipelas: the ſoreneſs in the throat may then aſſume all the characters of malignant angina.

89. Another eruptive fever, commonly epidemic,

mic, ſhows itſelf more readily in winter, and continues till the ſummer ſolſtice. In general, it attacks only once during life, and, for the moſt part, in infancy.

It begins in general towards evening, with a ſhivering more or leſs violent, ſoon followed by a general heat, with thirſt, loathing, anxiety, vomiting, &c. Hoarſeneſs, a dry and frequent cough, difficulty of reſpiration, and repeated ſneezing, ſoon enſue. The eye-lids become ſwollen and red, and the eyes watery. The patient experiences drowſineſs, heavineſs of the head, and a pain towards the fore-part of it. As in catarrhal affections, all theſe ſymptoms increaſe towards evening.

The intenſity of the fever increaſes till the third or fourth day, when the eruption begins to appear, firſt on the face, and then ſucceſſively on the other parts, in the ſame order as that of ſcarlatina. This eruption is compoſed of ſmall red points, ſenſible only to the touch, and which unite into cluſters.

Towards the third day of the eruption the red colour of the ſkin becomes brown; and towards the fifth it entirely diſappears, and is ſucceeded by a ſlight deſquamation.

It is rare to ſee the fever, or the ſymptoms of catarrhal affection, ceaſe after the eruption. They increaſe ſometimes even after the deſquamation. In ſome caſes, the cough and difficulty of reſpira-

tion increaſe to ſuch a degree as indicates an affection of the lungs; at other times a diarrhœa and obſtinate ophthalmia take place.

In ſome patients, the eruption appears after the ſecond day over almoſt the whole body. The cough and ophthalmia increaſe, and are accompanied with great oppreſſion, a violent heat and agitation; the ſkin is dry, the throat becomes of a dark red colour, and the eruption diſappears towards the end of the fourth day. The fever then abates, but the ophthalmia increaſes as well as the cough and oppreſſion. The patient has ſcarcely any thirſt, and no expectoration takes place. He experiences looſeneſs, extreme weakneſs accompanied with delirium, and ſoon falls a ſacrifice to the diſeaſe. Death enſues ſometimes in the firſt or ſecond period; but for the moſt part in the ſecond or third week. It is generally preceded by laborious reſpiration, dyſentery, gangrene in the rectum, and particularly in the genitals among females, ulcers in the mouth, &c. On opening the body, the lungs are found ſoft and flabby, the blood-veſſels diſtended, with adheſions, gangrenous points, &c. *Rubeola* (meaſles).

This fever, which is ſpecially catarrhal, is in general not very dangerous, and terminates ſpontaneouſly in ſeven or eight days; but when it prevails with epidemic fevers of a bad character, when it attacks very young children of a weak conſtitution,

tion, and when it announces itſelf by ſymptoms marked with adynamia, it frequently becomes fatal.

90. Variola (ſmall-pox), a diſeaſe well known, is a contagious epidemic malady, which in general affects every individual, but only once, who live a certain number of years: it for the moſt part comes on in infancy.

Its attack generally commences at noon by a fit of ſhivering, which is afterwards repeated, and is ſoon followed by a continued fever, with ardent heat; the eyes become red and brilliant, the face is ſlightly ſwelled; the child complains of a pain in the head, laſſitude in the back and limbs, pain in the epigaſtrium, and appears as if aſleep. In general, it experiences nauſea, vomiting, and often ſome convulſive movements, eſpecially towards the ſecond or third day.

The fever gradually increaſes with ſweats till the third day: at this period ſmall red ſpecks, which gradually riſe and thus form puſtules, are obſerved firſt on the face. The eruption ſpreads by degrees over the neck, the hands, then to the trunk and lower limbs; and towards the fifth day it is diffuſed over the whole body. The fever then abates and diſappears. The puſtules increaſe in number, become larger, and towards the fifth day their ſummit exhibits a ſmall veſicle, containing a liquor

almoſt colourleſs. Theſe veſicles ſtill increaſe in ſize with a ſmall depreſſion in the middle, and towards the eighth day aſſume a ſpheroidal form. At this period the bottom of them is ſurrounded by a red circle, which, when the puſtules are numerous, colours the whole ſkin. Sometimes the face ſwells, and the tumefied eye-lids cover entirely the eyes. An obſtruction in the throat often takes place alſo, with hoarſeneſs, a difficulty of deglutition, and ſalivation. The matter of the puſtules, which was at firſt limpid, becomes in the mean time opake, then white, and at length yellowiſh.

Towards the eleventh or twelfth day, each puſtule exhibits, at its ſummit, a ſmall black ſpeck, which burſts, and affords a paſſage to the matter; the latter becomes dry, and forms a ſmall black ſcab. The portion of matter which remains in the puſtule becomes dry alſo, and at length falls off with the veſicle, leaving on the ſkin a browniſh ſpot, which is ſlowly effaced. Sometimes theſe ſcabs drop off at a very late period; and the part which they covered, deſtroyed to a conſiderable depth, exfoliates in ſmall ſcales, and remains hollow for ever.

In proportion as the ſwelling of the face decreaſes, a ſimilar ſwelling often takes place in the hands and the feet. In general, the puſtules break only in the face; in other parts the matter dries in the veſicle, and falls off along with it. When the puſtules

puſtules are very numerous, eſpecially in the face, the fever often recurs towards the eleventh day, and does not ceaſe till after their deſiccation.

Such is the moſt common progreſs of the ſmall-pox. This affection, in general, is milder as the eruptive fever has been ſlighter, the eruption leſs abundant on the face, and as the inſulated puſtules are more fully developed.

But it is not uncommon to ſee this progreſs interrupted: the fever, at firſt, is often too violent, and is accompanied with a greater degree of drowſineſs, delirium, repeated vomiting, and numerous epileptic fits. The eruption is premature, or too ſlow; takes place ſimultaneouſly in every part of the body, and is ſometimes attended with a ſcarlatine efflorescence. The puſtules, ſtill very numerous, eſpecially in the face, but much ſmaller and leſs prominent, form often cluſters entirely ſimilar to thoſe of the meaſles. The fever in this caſe experiences only a very ſlight remiſſion; it again acquires a degree of exacerbation towards the ſixth day, and continues violent till the end of the diſeaſe.

The veſicles appear at an earlier period; they remain flat, are confounded with each other, and the face ſometimes ſeems rather to be covered with one veſicle than with a number of puſtules. Thoſe which are inſulated do not exhibit a red ring at the bottom, and the intermediate parts of the ſkin

are generally pale and flabby. The affection of the throat and the ſalivation are always carried to a high degree; in children theſe ſymptoms are often ſucceeded by a continual diarrhœa. The ſwelling of the face ſoon takes place, becomes conſiderable, and does not abate till towards the eleventh or twelfth day. The matter of the veſicles thickens into brown or black cruſts, which ſlowly detach themſelves. The ſubjacent parts then undergo a deſquamation, which leaves on the ſkin permanent marks of this troubleſome malady. The puſtules which ariſe in other parts of the body, though further from each other, do not aſſume a great degree of development; the liquid they contain never acquires a purulent conſiſtence, nor a yellowiſh colour.

During the exacerbation of the fever petechial eruptions, red or purple ſpots, vibices, and gangrenous ſpots are obſerved; and ſometimes hæmorrhagies take place.

Under this form, the diſeaſe is always exceedingly dangerous, and frequently becomes mortal. When not attended with a fatal iſſue, it often leaves behind it abſceſſes, obſtinate ophthalmiæ, amauroſis, obturation of the lacrymal paſſages, &c.

The two forms here deſcribed, diſtinguiſhed by the improper denominations of *diſcrete* and *confluent* ſmall-pox, are the two extremes of the malady. They contain between them a multitude of ſhades,

ſhades, which differ by imperceptible degrees, according as they approach to the one or the other.

The ſmall-pox, in general, is leſs dangerous in children than in adults; in ſpring than in ſummer and autumn; it is more deſtructive when it prevails with malignant diſeaſes.

The ſeverity of the diſeaſe, cæteris paribus, depends in a great meaſure on the quantity of puſtules by which the face is covered; and it is certain that heat is one of the principal cauſes of their development. It is therefore always proper, before and during the eruption, that the patient ſhould remain out of bed, with the head bare, lightly clothed, eſpecially towards the upper extremities, and expoſed as long as poſſible to the impreſſion of the cool air. It is alſo of great advantage, in preventing too confluent an eruption on the face, to cover well the lower extremities, and even to apply various ſtimulating ſubſtances. Different ſtimulants conveyed to the gaſtric ſyſtem are alſo very uſeful, as they tend to diminiſh the irritation of the ſkin. For this reaſon, emetics are beneficial in the commencement of the ſmall-pox, and gentle laxatives (ſuch as ſweet muriate of mercury) during the eruption. Bleeding is ſometimes neceſſary, and even indiſpenſable when the fever announces itſelf with great violence in a vigorous and ſanguine adult.

The ſmall-pox, for the moſt part, exhibits an epidemic

epidemic progreſs; it is propagated from one perſon to another; affects all thoſe individuals who have never before been attacked by it; and then diſappears for ſeveral years.

Variolous epidemiæ commence, for the moſt part, in the ſpring, increaſe in ſummer, abate in autumn, and commonly diſappear in winter, to begin again the ſpring following. They differ much from each other in different years, and even in different ſeaſons. They are, in general, more violent according as they begin later in winter; and they become more dangerous in ſummer and autumn, eſpecially when malignant fevers prevail.

The ſmall-pox is epidemical only by contagion. The contagious principle reſides eſſentially in the matter produced by each puſtule. This matter poſſeſſes the infectious principle from the time of its formation in a tranſparent fluid, till that of its deſiccation in the veſicles. At that period the ſcabs, the ſcales, and, in a word, all the remains of the deſquamation, become permanent ſources of contagion. Theſe remains, when reduced to duſt, can retain their quality for a great number of years, and, if accidentally diſſeminated in the atmoſphere, may ſpread the infection, and, when tranſported by the winds, may even convey it to a great diſtance.

To produce the ſmall-pox, it is ſufficient that a particle of its pulverulent product be applied to

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any part naturally humid, or accidentally deprived of its epidermis; and it is probable that the aërian paſſages are thoſe on which the infection oſteneſt produces its effect.

91. A few years ago, *inoculation*, then introduced, was a great benefit to the human race. Of a hundred children inoculated, ninety-nine had the diſcrete kind of ſmall-pox. Inoculation was attended with this advantage, that it could be performed at the age when the ſmall-pox is commonly mild; it afforded an opportunity of chooſing the moſt convenient ſeaſon and time, and of avoiding every affection that might have counteracted its progreſs.

The quantity and quality of the variolous matter neceſſary for inoculation are things of indifference. The ſmalleſt quantity may be ſufficient to produce the diſeaſe, and a larger quantity can do nothing more. The quality of the variolous matter is always the ſame in all individuals. It is the reſult of a ſpecific mode of action, and can in no manner participate in the ſuppoſed bad humours which might exiſt in the child by whom it is furniſhed.

Of the different modes of inoculation, the following has been preferred: A puſtule in a ſtate of maturity, and not yet deſiccated, is pricked with the point of a lancet, and this inſtrument, charged with a ſmall limpid drop of the fluid, is then introduced

troduced obliquely beneath the epidermis: when drawn out, care is taken to apply the thumb to the orifice, in order to retain the matter. The puncture is often ſo ſlight that no blood iſſues from it.

The child ſubjected to this operation was not confined to any particular regimen; it was allowed to play in the open air, care only being taken to guard it from exceſſive heat, too abundant nouriſhment, and too long ſleep.

The phænomena of the diſeaſe appeared in the following order:

The ſecond day, a ſlight trace of the puncture.

The third, a ſmall yellowiſh red ſpeck, with a ſlight lenticular hardneſs, beneath the epidermis.

The fourth, a hard rugous puſtule, of a bright red colour, covered with ſerous veſicles perceptible by the microſcope; an itching around it.

The fifth, the puſtule white at the ſummit and red at the baſe; the principal veſicle ſurrounded by ſeveral others ſmaller in ſize. A pain begins to be felt under the arm-pit; the colour of the face frequently changes; the pulſe becomes variable; the child exhibits alternations of ſadneſs and livelineſs, &c.

The ſixth, the principal puſtule, filled with a limpid ſeroſity, becomes very prominent, and riſes into a point; the itching around it and the pain in the arm-pit are more ſenſible.

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The ſeventh, the puſtule, of a larger ſize, becomes opake; its red areola acquires more extent; the patient experiences a ſenſation of general laſſitude, with ſlight fits of ſhivering, tranſient heats, heavineſs of the head, and ſometimes pain in the epigaſtrium.

The eighth, the puſtule breaks and ſuppurates; the fever increaſes, and the following ſymptoms are obſerved: agitation in the night-time; ſleep interrupted; ſtarting up in bed, and ſometimes ſlight convulſive movements.

From the tenth to the twelfth day the eruption is general, and the further progreſs of the diſeaſe is the ſame as that of the moſt benign variolæ. At any rate it is rare that it becomes confluent, and has a fatal termination.

92. At the period when inoculation was introduced into Europe, a chimerical project was formed for exterminating the ſmall-pox. But even if it had been poſſible to inoculate, at the ſame time, all thoſe never attacked by the ſmall-pox, the ſucceeding generation would ſtill have been expoſed to the contagion from the preſerved remains of the old variolous puſtules.

However, what was then an empty dream may now be realized; for ſince the vaccine inoculation has been employed, every thing gives us reaſon to hope that, when univerſally diffuſed, it will completely

completely oppoſe the development of the ſmall-pox.

The advantage of inoculation was founded on this circumſtance: that the development of the ſmall-pox deſtroyed in the individual the diſpoſition for again contracting it. That of the vaccine depends on this principle, that it deſtroys the diſpoſition for the ſmall-pox before its appearance.

The vaccine is tranſmitted in the ſame manner, and follows nearly the ſame progreſs as that of the inoculated ſmall-pox.

On the ſecond day ſcarcely any traces of the puncture appear.

In the courſe of the third a ſmall roſe-coloured ſpot is obſerved, and the finger perceives a ſmall indurated point, which increaſes with the red ſpot, and ſoon forms a ſmall puſtule.

From the fifth to the ſixth day the tumour increaſes, and a circle of a bright white colour, which terminates the circumference of the puſtule, is obſerved. This circle forms a roll which riſes, becomes broader, and gives to the ſurface of the puſtule the appearance of a narrow capſule, of a ſatin white colour towards the edges, and browniſh gray towards the centre, where a trace of the puncture ſtill remains.

On the eighth day the matter of the puſtule is perfectly limpid; it appears to be contained in ſmall cells or areolæ, which communicate with

each other, and, when an aperture is formed in them, exudes ſlowly. This ſeroſity ſerves to propagate the matter by inoculation.

From the eighth to the tenth, and even the eleventh day, the tumour and puſtule gradually increaſe. The redneſs and hardneſs extend, and form a ſort of eryſipelatous areola, hard, exceedingly ſenſible to the touch, and which ſometimes is two inches in diameter. At this period the individual often experiences a pain under the armpit, and the glands in that part are found to be ſwelled. Sometimes pains in the head take place, with general laſſitude, loathing, nauſea, and alſo vomiting, but rarely. In ſome caſes very evident febrile ſymptoms are obſerved. This general indiſpoſition never laſts more than a day; and in children below the age of eight or nine years ſcarcely any ſigns of indiſpoſition are ſeen.

Towards the eleventh or twelfth day the puſtule becomes corrugated, loſes its tranſparency, and aſſumes the colour of a dead leaf. The matter, which is turbid and thick, can no longer give riſe to the ſame ſeries of phænomena; it becomes dry with the pellicle, and forms a thick browniſh cruſt, which detaches itſelf between the twentieth and the twenty-fifth day. The deſquamation, which then follows, leaves on the ſkin a depreſſion, which, without doubt, will always remain.

There never yet has been an inſtance of a perſon who has had the vaccine being attacked by

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the ſmall-pox, notwithſtanding the trials made for that purpoſe, either by inoculation or by intercourſe with perſons infected by the ſmall-pox; ſo that the efficacy of the vaccine, as a preſervative from the ſmall-pox, can no longer be doubted *.

93. The four diſeaſes, the hiſtory of which has here been given, are characterized by a general derangement, or febrile ſtate, which continues for ſeveral days before the development of the local affection; and it is by this circumſtance that theſe affections are diſtinguiſhed from phlegmaſiæ. In theſe fevers the derangement of the gaſtric ſyſtem is peculiarly remarkable; and an affection is always obſerved in ſome points of the mucous ſyſtem.

All theſe diſeaſes, eryſipelas excepted, are epidemical, and never attack the ſame perſon a ſecond time: the laſt is highly contagious. In a word, they all aſſume more or leſs the character of the prevailing diſeaſes.

In the hiſtory of the fevers about to be given, we ſhall ſpeak of many other eruptions, which appear to be only accidental; which exhibit no regularity in their progreſs, and which ought to be conſidered merely as particular ſymptoms of the diſeaſes which they accompany.

* The reader may ſee in a work by C. Huſſon the method to be followed in the vaccine inoculation. A complete hiſtory of this valuable diſcovery has been given by C. Moreau.

CON-

CONTINUED FEVERS.

94. In cold, dry, elevated regions, expoſed to the northerly winds, in winter and at the commencement of ſpring, among adults of an athletic conſtitution, accuſtomed to ſucculent animal food, generous wines, &c. who live in a ſtate of indolence, or who have ſuddenly abandoned a very active life for one of inactivity, who have been ſome time deprived of an habitual ſanguinolent evacuation; at the period of the firſt menſtruation retarded or difficult; during pregnancy, &c. ſome individuals begin ſometimes to experience a general ſenſation of heavineſs, laſſitude, and numbneſs, with fluſhes of heat in the face, wandering pains in the head, vertigo, ſinging in the ears, drowſineſs, agitated ſleep, &c. In this caſe, if theſe ſymptoms increaſe, or, what is more common, if the individual be ſuddenly expoſed to an exceſs of intemperance or fatigue, to the impreſſion of an ardent ſun on the head, or to ſudden cold, eſpecially when in a ſtate of perſpiration, a violent fit of paſſion, &c. the following ſymptoms of diſeaſe may take place. Continued moiſture of the body, preceded or not by ſhivering; ſweats; pulſe frequent, hard, elevated, and often unequal;

face ſwelled and highly coloured; beating of the carotid and temporal arteries; eyes projecting and watery; pains in the head; watchfulneſs; tongue moiſt, red, or whitiſh; thirſt moderate; urine ſmall in quantity, and for the moſt part red; in young individuals, diſturbed ſleep, ſubſultus tendinum, ſlight convulſive movements.

Sometimes, at the end of twenty-four hours the patient experiences moiſture on the body, with ſweats, or the urine becomes nebulous, and the diſeaſe terminates. Sometimes hæmorrhagy takes place, and towards the fourth day the nature of the ſweats and of the urine announces a reſolution of the diſeaſe, which is often effected without any ſenſible criſis. In other caſes, there is a ſucceſſive and gradual increaſe of the ſymptoms till the fourth day; the patient then experiences a violent pain in the head, which often produces phrenetic delirium; the tongue is dry, with ardent thirſt carried to the utmoſt degree, anxiety, difficulty of breathing, great agitation, and often a hæmorrhagy. The urine becomes turbid and ſedimentous, and the ſweats indicate for the ſeventh day a ſalutary criſis. A ſimple exudation of blood from the noſe announces, with certainty, for the ſeventh day an abundant and critical hæmorrhagy. But if the diſeaſe retains all its intenſity beyond the firſt week, it then never terminates but in the courſe of the ſecond, towards the eleventh or the fourteenth

fourteenth day, eſpecially if about the end of the firſt week the urine begins to become nebulous. Sometimes, however, the affection is prolonged, and changes into a local phlegmaſia, &c.

This diſeaſe in general follows a *continued* progreſs, without remiſſion or exacerbation. It commonly terminates by ſweat or hæmorrhagy, and ſometimes without ſenſible excretions. SYNOCHE. *Inflammatory fever.*

95. There is one fever very common, which is obſerved in all climates, at all ſeaſons, among all individuals, and which however is more prevalent at the end of ſummer and in the commencement of autumn, after violent and long-continued heat, which attacks more readily individuals of a bilious conſtitution, accuſtomed to abundance of animal food, and who lead a ſedentary life, or thoſe who are habituated to coarſe food and to hard labour.

It frequently announces itſelf a long time before by heavineſs, numbneſs, and pains in the limbs, which increaſe in the evening or at night, with a ſenſation of pricking and ſhivering at intervals. The patient experiences a great ſenſibility to cold, even during the greateſt heat. The face is often obſerved to be pale, and ſometimes red, or to be alternately ſo, eſpecially among females. A propenſity to ſleep comes on, and ſometimes pains in the head. The patient experiences a

bitterneſs in the mouth, particularly in the morning, and the tongue becomes covered with a whitiſh or yellowiſh mucus; loſs of appetite, diſguſt for animal food, and a deſire for vegetables and acids; fetid eructation, nauſea, retching, an heavy tenſion or acute pain in the epigaſtrium, conſtipation or diarrhœa. The patient is much agitated in the night-time, experiences ſudden anxiety, ſtartings on the approach of ſleep, and ſome irregular paroxyſms of fever.

This aggregate of ſymptoms, which announces in general a derangement of the gaſtro-hepatic ſyſtem, frequently diſappears by the effect of an emetic, or ſpontaneouſly after a ſeries of vomiting, and ſtools, often bilious, abundant ſweats, and a diſcharge of ſediment ous urine.

But, in this ſtate of things, after exceſſive labour, prolonged watching, venereal and other intemperance, fits of paſſion, melancholy affections, improper remedies, expoſure to an infectious atmoſphere, and ſometimes without any known cauſe, theſe firſt ſymptoms for the moſt part become aggravated, and change into a regular diſeaſe, the progreſs of which we ſhall here deſcribe.

It announces itſelf by ſhivering, followed by heat: the cold varies from ſimple ſhivering to tremor and agitation of the whole body. This ſtate is not accompanied with a lowering of temperature proportioned to the ſenſation of cold. The patient experiences

experiences pains in the loins, back, and limbs; the eyes are red, with a bright yellow or greeniſh tint. Sweats often break out in the face and head; the cheeks aſſume a dark red colour, with a ſtreak of greeniſh yellow, which deſcends from the alæ of the noſe to the commiſſuræ of the lips; the tongue is white or yellowiſh, ſometimes vilious, and may exhibit all the intermediate ſhades between that ſtate and the formation of a thick blackiſh cruſt. Symptoms which announce an exalted action of the liver are obſerved, ſuch as eructation of a bitter, ſweetiſh, and acrid matter; nauſea, vomiting of porraceous, yellow and bitter matters; a ſenſation of plenitude and heat at the ſtomach; ſometimes a ſimple ſpaſmodic conſtriction in the epigaſtrium; at other times heavy and exceedingly violent pains; bilious fetid ſtools, with colic, often very excruciating; at other times conſtipation more or leſs obſtinate: the urine is in ſmall quantity, and highly coloured; but it often changes its character in the courſe of the diſeaſe. The patient experiences a greater or leſs pain in the head, and ſometimes with ſuch ſhooting as if the cranium were ready to ſplit: the pulſe is full and accelerated, with a heat more or leſs acrid of the ſkin, and ſometimes with a ſenſation of internal ardor, pungent and intolerable. The patient experiences great thirſt, and frequently calls for cold and particularly acid liquors. He is dejected diſguſted with life, and ſhows great impatience on the moſt trifling occaſions. Tranſi-

ent or permanent fits of delirium come on; he is much agitated in the night-time; awakes, and ſtarts up in terror.

Of the different terminations of this diſeaſe, the moſt beneficial is that ſpeedily produced by an emetic: after which the anxiety ceaſes; the diarrhœa or conſtipation diſappears; natural ſtools take place, and the urine is at firſt nebulous, and then ſedimentous, without becoming tranſparent. The tongue begins to grow clean from the tip to the root, and the appetite and ſleep return.

This diſeaſe terminates favourably alſo by an inſenſible reſolution; by ſeveral ſpontaneous evacuations or vomitings, after a greater exacerbation, followed by critical diſcharges of urine and ſweats; naſal, hæmorrhoidal, and uterine hæmorrhagies, &c.

A leſs favourable termination is announced by abundant ſweats during the firſt days. An emetic produces no relief; conſtipation or an obſtinate diarrhœa takes place; the urine remains limpid, or merely nebulous at the ſurface, ſometimes ſedimentous, and ſometimes without any depoſit, &c. The fever is converted into chronic affections of different natures.

But the moſt fatal termination is announced by local, ſecondary phlegmaſiæ, gangrene, internal carbuncles, and converſion into a fever of the moſt malignant character.

This malady is variable in its duration: it is never mortal of itſelf, and after a ſeries of regular

ſymptoms

ſymptoms the patient, for the moſt part, returns to a ſtate of health. The ſalutary vital movement evidently ſhows that expectant medicine is that principally indicated. Active medicine, however, may often prevent or check the diſeaſe in the commencement.

This affection, denoted generally under the name of BILIOUS FEVER, aſſumes different forms.

Sometimes, after the uſual commencement, there are obſerved towards evening an increaſe of heat and other ſymptoms, commonly without ſhivering, except towards the critical periods. This exacerbation is more violent every other day, but without a complete remiſſion. In general, the termination is favourable, and for the moſt part is effected merely by the power of nature, at the end of the firſt, or in the courſe of the ſecond or third week. This form is called *continued bilious fever*. It is combined ſometimes with phlegmaſic ſymptoms.

In warm climates, among individuals of a very hot and irritable temperament, great ſenſibility takes place in the region of the heart, with a real cardialgia, violent pain in the head, and a ſcorching heat in the bowels; the patient experiences extreme agitation, great anxiety, and unquenchable thirſt: the tongue is parched, becomes blackiſh and full of cracks, and phrenetic delirium takes place. This fever, called *ardent* (*cauſus*), often changes into fevers of a malignant character.

At other times, after the uſual commencement,

or after the firſt form has exiſted ſeven or eight days, a paroxyſm with ſhivering takes place every day, recurring either regularly in the evening, at night, or in the morning, or very irregularly in the evening and in the night-time. The duration of the ſhivering is from half an hour to two hours; that of the heat three, four, or even ſix hours. The intervals of remiſſion are attended with retching. The paroxyſms continue with the ſame force till the twentieth or twenty-fifth, and rarely to the twenty-ninth day; after which they gradually abate, the ſhivering decreaſes and diſappears; on the thirtieth, thirty-ſecond, or thirty-ſixth day nothing remains but a mere exacerbation. There are then manifeſted all the ſigns of a ſlow and gradual termination, which rarely takes place before the forty-ſecond day; but which is retarded to a later period when the patient is haraſſed with improper remedies.

The uſe of emetics ſeems to be very often indicated in this form, which has been diſtinguiſhed by the name of *remittent bilious fever*.

96. In low marſhy diſtricts, during cold damp ſeaſons, at the end of autumn, among individuals of a weak relaxed conſtitution, bloated, ſedentary, and aged perſons exhauſted by exceſs of ſenſual pleaſures, by ſtudy, bad hours, and moral affections; debilitated by violent evacuations, ſome anterior diſeaſe, or by wretchedneſs; who reſide in dark,

dark, dirty, cold, and damp habitations, who uſe unwholeſome food, or food incapable of ſupplying much nouriſhment; among the female ſex, and particularly thoſe who are young and ſubject to chloroſis, children in a ſtate of atrophia, &c. a fever often appears, preceded in general, for a certain period, by a train of ſymptoms exceedingly varied.

The patient experiences frequent alternations of appetite and loathing; often after meals, or in the morning, nauſea and vomiting, with a ſenſe of preſſure in the epigaſtrium; a ſlight diarrhœa, more or leſs mucous, going off and returning by intervals, is obſerved, and a frequent evacuation of worms; ſometimes aphthæ appear, accompanied with a pain in the gums, and a dry abdominal cough.

Some ſlight fits of fever often come on in the night-time. Theſe are commonly announced by an apparently better ſtate of health, unuſual cheerfulneſs, and a greater appetite. But after meals the patient experiences a ſenſe of heavineſs and diſtenſion in the ſtomach, with ſwelling and great ſenſibility in the abdomen; a ſlight coſtiveneſs, thirſt, dryneſs of the fauces, flatulencies, abundant ſweats, and particularly between the thighs; ſlight horripilation in making water.

Towards evening the patient experiences drowſineſs, with frequent yawning; his ſleep is at firſt tranquil, but ſoon becomes diſturbed by frightful dreams, &c.

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The eyes are dry or watery; ſlight horripilations take place, accompanied with coldneſs, and particularly in the feet.

Theſe ſymptoms, after being ſeveral times renewed with more or leſs regularity, conduct to a ſtate of health, or they continue to increaſe. The patient then experiences a ſort of ſtupor, laſſitude, diarrhœa, vomiting, naſal or other catarrh, puſtulous efflorescences, ulcerations in the lips, the mouth, and the gums; an excretion of ſebaceous matter from the eye-lids takes place, and that of cerumen from the ears is increaſed; the urine depoſits a mucous ſediment; ſweats come on, eſpecially in the night-time and morning, with an œdematous ſwelling of the feet, &c. If the ſlight feveriſh paroxyſms do not bring back health, after a manifeſt criſis, or in an inſenſible manner, a fever more or leſs characterized enſues.

Its attack, which is rarely ſudden, general commences towards the cloſe of the day, in the evening, or during the night. The tongue is then pale, white, ſhining, and ſometimes reddiſh at the root; red for the moſt part at the edges and at the tip; it becomes covered with fungous papillæ, often very prominent; the whole mouth, the fauces, and larynx, are choked up with a mucous matter of greater or leſs thickneſs; the mouth is ſwelled and painful, and an excoriation of its interior membrane takes place. Aphthæ appear on the tongue and gums, a ſenſation of fullneſs is felt at

at the ſtomach, accompanied with nauſea, ſpontaneous vomiting, and an abdominal cough. The belly is generally hard, ſomewhat tumefied, and ſenſible to the touch. The colour of the urine is variable; it is often pale, and the patient in voiding it experiences a ſhivering, with heat and a ſort of difficulty.

The patient experiences alſo horripilations, weaker or ſtronger, and repeated at longer or ſhorter intervals, with ſhivering, followed by a heat exceedingly diſagreeable and a burning thirſt. He feels heavy pains in the head, particularly towards the forehead, and often a pain in the feet.

The pulſe is exceedingly variable, according to the ſymptoms of the moment, the approach of criſes, &c.

Afterwards, a general debility is obſerved; the night becomes more fatiguing to the patient than the day; his ſleep is interrupted by ſtrange apparitions and continual agitation. He becomes dejected, capricious, ſullen, reſtleſs, and emits plaintive ſighs unaccompanied with pain.

The progreſs of this diſeaſe is exceedingly various. In general it is not very rapid, and ſometimes it is very ſlow; its termination exhibits great variety alſo, both in regard to the mode and to the time. For the moſt part it takes place in an inſenſible manner, after a great number of excretions; the moſt frequent are ſweats during the night and in the morning, accompanied with an acid

acid ſmell; vomiting or mucous diarrhœa, urine with a white light ſediment, coherent or lateritious. The aphthæ of the mouth degenerate ſometimes into ulcers, the gums ſwell, and a puſtulous efflorescence takes place on the lips. The body becomes covered with puſtules; furunculi, a purpliſh exanthema, ulcerations in the ſacral and trochanterian regions; an excretion of worms is alſo obſerved, and the diſeaſe may be converted into a fever of a bad character, or into ſome chronic affections.

When its converſion into a malignant fever brings on ſpeedy death, the following phænomena are obſerved on opening the body: the liver is ſomewhat hard, and diſtinctly granulated; the ſides of the ſtomach are thick; its interior tunic is blueiſh, fungous, and covered with a viſcid mucus. The inteſtines appear ſhrunk, blueiſh, tranſparent, and paler in thoſe places which have been ſtrongly diſtended by the air; the duodenum and the reſt of the ſmall inteſtines are lined with a bilious mucus, and often contain lumbrical worms. The large inteſtines, covered by an excrementitious pulp, conceal ſometimes trichurides. All theſe worms are generally firm, and in a ſound ſtate. The mucous follicles of the ſtomach, of the duodenum, and ſometimes even thoſe of the jejunum and the ileum, are prominent; and towards the ileo-cœcal valve, the cœcum, and its appendix, are collected together in cluſters. The orifices of theſe follicles exhibit as many black points.

Theſe characters are rarely found alone in the body, becauſe this malady in general is not mortal until it has aſſumed the character of more pernicious affections; and the phænomena peculiar to theſe affections are then obſerved.

The diſeaſe which exhibits the whole or a part of the ſymptoms here deſcribed, has been diſtinguiſhed by the name of MUCOUS FEVER. But there are ſeveral kinds which unite to theſe general ſymptoms a peculiar progreſs and character, which will not admit of their being confounded.

Sometimes the fever is continued, but ſlight, with exacerbation towards evening; its progreſs is very ſlow, and it continues ſeveral weeks. *Continued mucous fever.*

At other times the fever is not very ſevere; the pulſe is weak, and often intermittent; the patient experiences ſhivering and heat, for the moſt part without ſweat, and ardent thirſt. The paroxyſms return every day, and ſometimes every two days: they are ſlight to the ſeventh, the eighth, and even the twelfth; more violent to the twenty-fifth, the thirtieth, and even beyond it; they gradually decreaſe to the forty-ſecond or forty-fifth, and at length diſappear. *Remittent mucous fever.*

97. This account of theſe three kinds of fever is rather a product of abſtraction, than the pure and

and ſimple reſult of obſervation. From the indefinite variety of ſimple and continued fevers, which are daily obſerved, I have ſelected the moſt ſtriking and moſt ſimilar characters, to form three principal *types*, which, like marks placed at certain diſtances, in this long ſeries of analogous affections, may ſerve as fixed points to which all the particular caſes can be eaſily referred.

Theſe three kinds of fever diſappear ſpontaneouſly, and are ſcarcely ever mortal of themſelves; but they often become ſo by their converſion into a PERNICIOUS fever, the general character of which remains to be given.

98. The pernicious fever of which we are about to trace out the general character, a character in ſome meaſure abſtractive, is for the moſt part epidemic. It apppears more readily in places where the air is damp, hot, and confined, loaded with emanations from putrid animal or vegetable matters; where great numbers of dirty, wretched or diſeaſed perſons are collected and crowded together in a narrow ſpace, in which the air cannot be eaſily renewed.

It attacks in preference perſons debilitated by diſeaſe, long fatigue, ſcarcity, exceſs of every kind; long grief, a continual ſtate of fear; in a word, by all thoſe cauſes which tend to weaken the nervous action.

The diſeaſe, whether theſe cauſes produce their effect

effect ſlowly, or whether one of them exerciſes a ſudden and violent action, announces itſelf by the following ſymptoms: laſſitude, heavineſs, indolence, continual cold, pain in the head, melancholy and aſtoniſhed air, confuſed ideas, interrupted ſleep, loathing, &c.

This equivocal ſtate between health and diſeaſe continues for ſome time, and the patient either recovers ſpontaneouſly or by the effect of a vomit, or the affection aſſumes a more ſtriking character. In this caſe its attack is announced by ſlight fits of ſhivering, a pain with heavineſs in the head, vertigo, loſs of ſtrength, moroſeneſs, an air of intoxication, and ſtupidity, fatiguing ſleep interrupted by dreams. The tongue is white, viſcid, and ſtill moiſt; the pulſe is weak, and nearly in its natural ſtate; reſpiration is ſomewhat confined.

After the firſt week theſe different ſymptoms increaſe, and particularly the proſtration of ſtrength. Sometimes a beating of the carotid arteries is obſerved, or alternations of paleneſs and redneſs in the face; the eyes are red, the breath is very often fetid, the tongue is foul, the teeth and mouth have the colour of ſoot; the pulſe becomes very ſmall, and heats come on, with fits of fever, ſtronger towards evening or night, which more readily affect the tertian type. The ſkin, which is arid and dry, acquires a more conſiderable heat, and ſooner or later becomes covered with petechial ſpots ſimilar to flea-bites, or larger, of a red,

a red, brown, yellow, or aſh colour, &c. Slight convulſive movements take place in the fingers, almoſt all the intellectual functions are deranged, and the patient falls into a ſtate of reverie, or of tranquil and ſilent delirium.

It is a favourable ſymptom when the urine towards the end of the ſecond week becomes turbid, thick, and ſedimentous, when a moderate diarrhœa takes place, with a ſlight deafneſs, pulſe more elevated, fuller and ſoft. The termination of the diſeaſe is ſpeedier and more certain, and the ſtate of convaleſcence is ſhorter, according as the natural progreſs of the ſymptoms has been leſs interrupted by active medicines.

But in the moſt dangerous caſes, after the ſecond week, the ſymptoms continue and increaſe. The ſtrength is weakened; the patient experiences a ſyncope on the leaſt motion; his ſleep becomes reſtleſs and difficult; he ſuddenly loſes all recollection; the ſenſes are troubled; he is dull of hearing; the eyes, watery, gummy, and nebulous, ſeem dead and ſquinting; and one of them is ſometimes larger than the other. A ſubſultus tendinum takes place; the hands tremble; the patient ſhows a deſire for uncovering himſelf, collects the bed-clothes in a bundle, picks the blankets, and makes motions as if driving away flies. The ſkin is dry and arid; ſometimes purpliſh, blueiſh, or livid ſpots appear on different places, with vibices, gangrenous ulcerations in the parts

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on which the body conſtantly reſts, and ſometimes ſwelling with a collection of matter in the parotid glands.

The breath is fetid; the tongue, dry, hard, cracked, and palſied, cannot iſſue from the mouth; the patient has no thirſt, and is incapable of uttering articulate ſounds. The pulſe is ſmall, weak, unequal and tremulous. Reſpiration is difficult, frequent, and irregular, with a motion in the alæ of the noſe and pains in the diaphragm. A hæmorrhagy often takes place from the noſe, the mouth, the lungs, and the eyes; from the anus, the matrix, the urinary paſſages, and the pores of the ſkin: the blood diſtils drop by drop, and often from ſeveral places at the ſame time.

The abdomen ſwells up; the fæces are fetid, and the urine is red, turbid or clear: theſe excretions are involuntary. The body becomes inert, as if inſenſible; the patient lies on his back with his limbs extended, never again turns, and abandons himſelf to his own weight, which carries him to the bottom of the bed. The ſweat, which exudes in large drops, is clammy and greaſy. A gradual deſtruction of ſenſibility and motion is obſerved; an abſolute loſs of the intellects enſues, and at length a total extinction of life.

Theſe ſymptoms are aggravated by too active remedies: they ſeem to be moderated by tonics and ſtimulants properly applied.

The body after death ſpeedily becomes putrid, and particularly towards the abdomen. All the parts ſhrink, and are penetrated with a bloody and ſat ſerous matter. Gangrenous ſpots appear in different parts, with collections of matter in the brain. The ſhrunk inteſtines contain fetid fæcal matters, and the worms found there are dead and withered. CONTINUED PERNICIOUS FEVER *(adynamic fever, putrid fever.)*

99. The general ſigns of weakneſs by which *continued pernicious* fever is characterized, are often combined with a ſeries of phænomena which evidently announce *derangement* and *irregularity* in the various ſymptoms of the diſeaſe. When this character of *anomaly* and *mobility* in the ſymptoms predominates, it gives to the diſeaſe a peculiar form, which is very remarkable.

During the firſt days, ſudden fits of ſhivering, a violent heat, and alternations of calmneſs and anxiety are obſerved. The ideas become confuſed, and the ſleep agitated. Sudden and violent pains in the head take place, with giddineſs, continual dreams, and a ſtarting from ſleep. The pulſe is very irregular, and reſpiration confined.

When the diſeaſe has made more progreſs, ſlight ſigns of mental abſence are obſerved, with a beating of the carotid and temporal arteries, ſubſultus tendinum, flushes of heat in the face. The eyes become

become bright and ſparkling; the feveriſh fits are very irregular; the tongue is dry, the ſkin parched; ſudden cold ſweats come on, with convulſive movements; frequent delirium, and a ſpeedy return to reaſon.

The diſeaſe terminates at periods exceedingly variable, and for the moſt part without any remarkable criſis or critical evacuations; the urine, in general, remains limpid, the ſkin dry, and the fever gradually ſubſides. There often remains, for a longer or ſhorter period and ſometimes for ever, a debility in ſome of the organs of the ſenſes, and particularly of ſight or of hearing; a weakneſs of memory, a kind of imbecility, or other nervous affections.

If the ſymptoms increaſe, the patient, in the laſt ſtage of the diſeaſe, loſes his ſenſes, ſpeaks incoherently, and becomes violently agitated. Local gangrenes often appear ſuddenly, or a læſion of ſenſibility manifeſts itſelf in ſome particular part. He afterwards experiences the moſt violent tranſports; makes continual attempts to riſe, and, if not cloſely watched, eſcapes, and ſometimes throws himſelf from the window. Theſe paroxyſms are often ſo violent, that ſeveral perſons are ſcarcely ſufficient to confine the patient; who on ſuch occaſions exerts extraordinary muſcular force. At length, convulſions take place in every part of the body, and the patient dies amidſt continual agitation.

Pernicious fever ſeldom exhibits this anomaly or ſudden change of ſymptoms, without preſenting characters of adynamia. This, however, ſometimes happens; and it does not appear that the fever, in this caſe, is either epidemic or contagious. This form of pernicious fever is commonly known under the name of *malignant fever*; a bad denomination, for which Dr. Pinel has ſubſtituted, in his Noſographia, the more proper one of *ataxic fever*.

100. Pernicious fever, under certain circumſtances, has a progreſs exceedingly ſlow, among perſons whoſe fibres are relaxed, and whoſe nerves are weak, or who are exhauſted by any cauſe whatever. It appears to be produced ſometimes by an epidemic atmoſphere, and develops itſelf in a very obſcure manner.

At the commencement of the diſeaſe, the organs of the ſenſes are affected by the ſlighteſt cauſes; ſeem to become blunted towards the end, and are excited with difficulty.

The diſeaſe often remains in the ſame ſtate for a very long time; and its ſalutary termination is effected ſlowly without a manifeſt criſis; or is followed by ſome critical phænomena, ſuch as deafneſs, puſtules, abſceſſes, miliary eruption, &c.

If the ſymptoms grow worſe, the patient becomes

comes gradually exhauſted, and dies in a ſtate of ſlight delirium, or in convulſions. Sometimes a continual diarrhœa or exceſſive ſweats come on, and he dies totally exhauſted at the end of five, ſix, or even more weeks. *Slow nervous fever.*

101. The moſt common pernicious fever is that which breaks out in hoſpitals, priſons, &c. In general, it exhibits ſtriking characters of adynamia and ataxia. It begins, for the moſt part, by a very intenſe bilious fever, which changes its character towards the fifth day. Sometimes it announces itſelf more ſlowly by the firſt ſymptoms of mucous fever: in ſome caſes of very active epidemia, its attack is ſuddenly announced by thoſe phænomena which form its eſſential characters.

In the hoſpitals of large cities, when poverty and diſeaſe bring thither a great number of patients, the wards ſoon become inſufficient to contain them, and ſeveral of them are crowded together in the ſame bed. In ſuch caſes, this fever develops itſelf with great energy, and ſeems to aſſume a character of contagion, which gradually ſpreads to other wards ſet apart for the hurt and wounded: from the ſick it is conveyed to the ſervants of the hoſpital; and from the hoſpital to the adjacent places, and ſometimes even throughout the whole town.

The caſe is the ſame in the military hoſpitals,

when crowded with ſick and wounded, in conſequence of an active and bloody campaign. *Jail fever. Typhus.*

102. Pernicious fever often aſſumes an endemic character in ſeveral diſtricts of America and the Weſt Indies expoſed to exceſſive heat and frequent rains: under analogous circumſtances of time and place, it becomes epidemic.

In places where it is endemic, it attacks chiefly thoſe who have come from a temperate climate to theſe damp and ſcorching regions; thoſe who expoſe themſelves to the night-dews, after violent exerciſe during the day, under the ardent heat of the ſun; thoſe who indulge to exceſs in ſpiritous liquors and venereal pleaſures, or who live in miſery and wretchedneſs. It ſeldom attacks the rich, females and children, or thoſe who do not much expoſe themſelves to the heat of the ſun. It ſcarcely ever attacks the natives, and it ceaſes during cold weather.

In certain places, ſuch as Cadiz, it becomes epidemic during the great heats, or when a ſcarcity of water and proviſion prevails. It attacks thoſe in preference who ſuffer moſt from theſe cauſes of diſeaſe.

Its attack is announced by ſome ſlight alternations of heat and cold, which are ſucceeded by pain in the head, anxiety, and vertigo. The ſleep is interrupted;

terrupted; the eyes become inflamed and ardent; the face, neck, and breaſt are red; the ſkin is dry and ſcorching; the tongue is foul, and the patient experiences loathing, nauſea, pains in the epigaſtrium, loins, and limbs. A teneſmus takes place; the urine is limpid or red; the pulſe full and frequent, &c.

This ſtate, which continues for ſome days, is for the moſt part followed by a ſort of apparent calm: the heat of the ſkin ceaſes, the fever abates, and the pulſe even becomes ſlower than uſual; but a proſtration of ſtrength ſoon takes place, with drowſineſs, delirium, ſenſation of internal heat, horripilations, violent ardor, intenſe fever, acute pain in the head and loins. The white of the eyes firſt becomes of a yellow colour, and then the circumference of the mouth and the temples. This colour afterwards extends to the neck, the breaſt, and the whole body. The patient experiences great oppreſſion; the pulſe is ſmall and intermittent. The lips become ſwelled, the tongue is red and dry, accompanied with ardent thirſt, nauſea, bilious vomiting, ſhooting pains in the epigaſtrium. The belly is diſtended, and painful to the touch. A diarrhœa takes place, and the fæces and urine are ſaffron-coloured.

At this period, when the ſymptoms do not make new progreſs, the tongue becomes moiſt, the vomiting ceaſes, bilious ſtools take place; the urine

appears turbid; the patient is relieved by a general perſpiration, and the health is gradually reſtored.

But if the diſeaſe makes new progreſs, extreme proſtration of ſtrength enſues, with watchfulneſs, delirium, agitation, ſubſultus tendinum. The pulſe is intermittent, and exceedingly ſmall. The ſkin, which is dry, is covered with petechiæ, vibices, or other exanthemata. The tongue then becomes arid, black, and full of cracks. The patient vomits up a black fetid matter; the ſtools and urine have the ſame character. Hæmorrhagies take place from the noſe, mouth, eyes, ears, and even from the pores of the ſkin. The ſweats become cold; the difficulty of breathing is exceſſive; the limbs have no heat, and death enſues.

All theſe ſymptoms often proceed with ſuch rapidity, that the patients are carried off in twenty-four hours, or in the courſe of a few days.

The body ſoon paſſes to a ſtate of putrefaction; the ſkin appears covered with livid ſpots, eſpecially towards the epigaſtrium, and the body ſeems as if all bruiſed. The blood often flows from different parts. The inſide of the body very often retains a conſiderable degree of heat, for eight or ten hours.

The ſurface of all the abdominal viſcera is of a yellowiſh colour, intermixed with large livid ſpots; the

the inſide of them is of a dark red colour. The liver, more voluminous and livid, exhibits ſometimes gangrenous ſpots, and blackiſh blood oozes from its interior parts. The bile contained in the gall bladder is thick, of a brown colour, and mixes with difficulty with water. Thick, black, and fetid urine is found in the bladder.

When the cauſes which produce this fever act with great intenſity, they attack a numerous claſs of individuals, and the mortality becomes very great. This circumſtance contributes, in an eminent degree, to aggravate the effects of the epidemia, as it ſpreads conſternation and terror, and diſpoſes a greater number of perſons to receive the diſeaſe, by depriving them of the ſtrength and energy neceſſary to reſiſt it. *Yellow fever.*

103. The laſt form of pernicious fever, which we ſhall deſcribe, breaks out moſt readily in warm damp countries, after long continued rains and exceſſive heats, in populous cities, among men condemned by their prejudices and ignorance to live in ſmall damp and gloomy habitations, amidſt wretchedneſs and dirt, and expoſed to the emanations of putrid animal ſubſtances. It develops itſelf after a famine, during the calamities of war, in beſieged cities, in crowded hoſpitals, priſons, &c. In the latter caſes, the chagrin, conſternation, diſcouragement and deſpair, to which theſe ſcourges

give riſe, tend perhaps more than the phyſical alterations they produce, to favour the attack of the diſeaſe. It is the moſt deſtructive of all the maladies known, and hence it may be readily ſeen that it is the *plague*.

When it begins to manifeſt itſelf in places where it rarely appears, the phyſicians at firſt confound it with the preceding diſeaſe, becauſe in that ſtage it has the ſame progreſs, and exhibits almoſt the ſame characters*. It appears to differ from the former only by the buboes which often take place in it, but which are never obſerved in the other, and by the greater rapidity and violence of the ſymptoms.

But when the plague has attained to its higheſt degree of exaltation, and produces the greateſt ravage, it follows a progreſs peculiar to itſelf, and which renders it eaſy to be known.

Its attack is announced by pain and heavineſs in the head, ſhivering, moderate heat in the ſkin, ardent heat in the interior part of the body. The words are uttered with precipitation, or the voice is altered; the face is red; the eyes are bright and ſparkling. The patient ſeems as if intoxicated; appears ſad and dejected; has an air of fear and timidity; falls aſleep, and ſtarts up in terror and deſpair.

* The plague of Marſeilles, and that of Moſcow, were at firſt conſidered by the phyſicians as *a malignant putrid fever*.

The

The pulſe is irregular, reſpiration difficult, and a hæmorrhagy ſometimes takes place from the noſtrils and fauces.

The tongue, at firſt white or yellowiſh, then dry and red, becomes at laſt black and rough. The patient has an exceſſive thirſt, accompanied with a ſlight degree of fever; experiences a heat at the ſtomach; nauſea, bilious or bloody vomiting; flux of the ſame nature; and the urine is red or lemon-coloured.

Theſe ſymptoms increaſe during the firſt days, and are often followed by *buboes** in the groin, arm-pits, and parotid glands.

The extreme proſtration of ſtrength and weakneſs which then take place, no longer permit the

* Buboes are abſceſſes which generally take place in the groin, rarely in the arm-pits, and ſtill more rarely towards the angle of the jaws. They appear from the attack of the diſeaſe, or on the ſecond or third day. They always place themſelves around the glands, and not on their ſubſtance. One never appears in the groin and another in the arm-pit at the ſame time; but, in general, in ſimilar parts, one on each ſide. Sometimes the bubo of the groin ſhows itſelf towards the upper part of the thigh, and that of the arm-pit towards the ſternum.

A bubo manifeſts itſelf by a tumour at firſt ſcarcely ſenſible, with profound pain: this tumour gradually increaſes, and follows the uſual progreſs of the abſceſſes of that part, when the patient does not move during the firſt days after the appearance of the diſeaſe; and hence it has been ſaid that it is a good ſign when it comes to ſuppuration.

When a bubo takes place on each ſide of the neck, they ſometimes increaſe to ſuch a ſize as to bring on death by ſuffocation.

patient

patient to ſit upright, and ſhow themſelves by tremor of the hands and feet. The eyes are red, projecting and watery. The patient has a fixed or wild look. A continual vomiting or diarrhœa, without a very fetid odour, takes place, accompanied with a great difficulty of breathing; *carbuncles** or *petechiæ*† appear on different parts of the body.

* Carbuncles take place in every part of the body, except thoſe covered with hair, and on buboes. They ſhow themſelves chiefly in the fleſhy parts, and are announced in the part where they are about to appear by a ſuperficial and pungent pain.

A carbuncle begins by a very ſmall pimple, which riſes into a puſtule, with redneſs at the baſe, and a white ſpeck at the ſummit. This puſtule ſpeedily becomes broader, and aſſumes very little elevation. When it is about four or five lines in breadth, the pellicle by which it is covered burſts; a little yellow ſerous matter exudes from it, and the bottom, already of a deep black colour, exhibits the character of carbuncle. This ulceration continues to become broader, and ſometimes acquires a conſiderable extent, with hardneſs around it.

Moſt carbuncles produce a profound diſorganization, and the blackiſh ſcar which they form ſpeedily detaches itſelf, and ſometimes leaves the veſſels, the nerves, and even the bones, uncovered.

† Petechiæ are ſpots nearly ſimilar to flea-bites: they take place in every part of the body, but chiefly on the anterior part of the trunk, and on the limbs: the patient before their eruption experiences a ſenſation of ſmarting in the ſkin; at firſt they are generally of a dark purple colour, and then black, without redneſs or elevation. Sometimes three or four ſeem to unite to form a puſtule, which produces a carbuncle: in this caſe a ſhooting pain is experienced in the part where it is about to appear.

The

The patient, free from any bad odour, exhibits at firſt nothing diſguſting; but after ſome days, eſpecially during ſweats, he emits a ſweetiſh diſagreeable ſmell, which adheres to every thing he has uſed, even to the apartment, and which cannot be removed but by waſhing, or long expoſure to the air.

If the diſeaſe continues to the ſeventh day, great hope may be entertained of a favourable termination, eſpecially when the buboes ſwell, come to maturity, and ſuppurate. The other ſymptoms gradually abate, and a cure is ſpeedily effected. But if the buboes, after being well developed, ſuddenly decreaſe or ſink down, death is almoſt inevitable.

Sometimes a ſtate of tranquillity and weakneſs take place; theſe ſymptoms announce ſpeedy death. Very often there prevails throughout the whole courſe of the diſeaſe a ſort of torpor, which terminates in a tranquil kind of death. At other times the patient ſeems to be in perfect health; aſks for food and drink, and ſuddenly drops down dead.

But when the fever makes a rapid progreſs, when the epidemia is violent, and the mortality very great, the inhabitants, deſpairing of being able to eſcape the contagion, are ſtruck with dread and conſternation, and expire without ſeeming to have experienced the ſevere ſymptoms of the diſeaſe.

This

This mode of infection is perfectly analogous to that of the aſphyxia of thoſe who cleanſe ſewers.

The diſeaſed in this caſe exhibit a pale, wan viſage, greatly altered; their aſpect indicates terror and deſpair. Their looks are wild and horrid, like thoſe of perſons who labour under hydrophobia. They experience inſupportable anxiety and frequent ſyncopes; they remain motionleſs, ſtammer, and can ſcarcely ſpeak; their voice becomes weak and extinct, and death often enſues in the courſe of two or three days, ſometimes in twenty-four hours. Some even die ſuddenly in a few hours, after ſlight ſymptoms of fainting and convulſions.

The blood drawn in this diſeaſe appears to be nearly in its natural ſtate.

The body when opened after death exhibits nothing particular. The limbs retain a great degree of flexibility; the fleſh is flabby and œdematous, and the ſkin ſometimes covered with vibices*.

Cold generally puts an end to, or greatly checks, the progreſs of this epidemia.

Strong robuſt perſons are attacked with more difficulty, and ſuffer more ſeverely. Thoſe of a weak, delicate conſtitution, women and children, are ſooner affected, and withſtand it better.

* Vibices are blueiſh or livid ſtripes on the ſkin; they appear only a little time before death, and often after it.

Exceſs

Exceſs of every kind diſpoſes the body for the reception of the diſeaſe; and in the height of the epidemia, fear and terror contribute to the deſtruction of a great many individuals.

It appears that perſons who have been once attacked by the plague ſeldom contract the diſeaſe again during the courſe of the ſame epidemia*.

104. Phyſicians who have ſeen the effects of the plague, and who have written on that diſeaſe, have obſerved that it is communicated by the neighbourhood of infected perſons; that it is more certainly contracted the nearer they are, and that it is poſſible to avoid it by removing to a diſtance from them. The greater number have thence concluded that it is eſſentially communicated by contact. Several of them, however, have obſerved that contact is not always neceſſary to communicate the infection; and Guy de Chauliac relates, that the plague of Avignon, in the thirteenth century, was ſo contagious, that the diſeaſe was caught merely by looking at thoſe attacked by it.

* Samoëlowits relates that eighty perſons who had contracted the plague at Moſcow, in the month of July, attended in the following month the patients ill of the plague in one of the hoſpitals, where a thouſand died every day, without any of them being again attacked. This phyſician, however, was attacked three times, but in a ſlight manner: he had ſwellings in the arm-pits, but they did not produce complete buboes.

It

It is not probable that the plague is propagated, at leaſt in the greater number of caſes, by the contact of the infected, or of articles which they have uſed; but there is reaſon to think that the emanations proceeding from them communicate the diſeaſe by being introduced into the lungs of thoſe in the neighbourhood.

It is well known that the epidermis cannot be eaſily penetrated by foreign ſubſtances, and we are acquainted with none which can traverſe it in this manner, without any effort, to convey diſorder and derangement to the whole organization. The poiſon of canine madneſs, and that of the viper, the individual effects of which are at leaſt as terrible as thoſe of the plague, exerciſe no action unleſs introduced beneath the epidermis, or applied to ſome part deprived of it.

On the other hand, the nerves in the noſtrils, the bronchiæ, the lungs and the mouth, which are not defended by a dry, and as we may ſay inorganic epidermis, can eaſily receive the impreſſion of deleterious miaſmata, depoſited there by the air which has been inſpired. The aſphyxiæ produced by ſome gaſeous ſubſtances, thoſe which ſometimes attack night-men and ditchers, when they inſpire air charged with emanations from animal ſubſtances in a certain ſtate of putrefaction, exhibit caſes of diſeaſe the progreſs of which is ſtill ſpeedier than that of the plague.

It

It is probable that the miaſmata proceeding from the bodies of perſons attacked by the plague do not adhere cloſely to the articles which have been uſed by them; that they readily diſengage themſelves by mere expoſure to the air; and that, when diſſeminated in the atmoſphere, they ſoon loſe their fatal property. If theſe miaſmata adhered to all bodies, and maintained themſelves in a fixed ſtate, there can be no doubt that in a country once infected by the objects uſed by the diſeaſed, like Moſcow and its environs, where this contagion in leſs than a year ſwept off more than 133,341 individuals, ſuch a large quantity of them would be formed that they would be frequently communicated and re-appear, at leaſt for ſeveral years. The meaſles, which are perpetuated in this manner, would be a ſcourge more terrible than the plague, if they could attack the ſame individual ſeveral times.

The circumſtances favourable to the production of the plague depend on the conſtitution of the atmoſphere, on certain localities, and on the diſpoſition of the individuals.

The atmoſphere favourable to this diſeaſe ſeems to be that produced by hot moiſt air, which leſſens the ſtrength and energy of thoſe who live in it.

The local circumſtances are: a diſtrict ſheltered from winds, ſubject to inundation by long continued rain, marſhy, and where by the ſudden

draining or evaporation of its waters a large muddy and fetid ſurface is left in a ſtate of exhalation. Theſe circumſtances comprehend alſo the diſengagement of effluvia from vegetable and animal matters in a ſtate of putrefaction; the different ſources of inſalubrity ariſing from ill-built cities, &c.

The diſpoſition of the individuals depends always on a phyſical ſtate of debility or mental depreſſion, which prevents them from reſiſting the cauſes of infection. This ſtate is produced by a concourſe of circumſtances exceedingly various, ſuch as low, damp, and infectious habitations; food deſtitute of nouriſhment, or of a bad quality; dirtineſs in regard to dreſs; the calamities which are the conſequences of famine or war.

The progreſs of the plague abates when the cold weather begins, but very often after it has ſwept off one half of the inhabitants.

In countries where this diſeaſe frequently makes its appearance it is never ſo deſtructive. The inhabitants ſeem to be accuſtomed to inſpire deleterious emanations, and are much leſs affected by them. Beſides, when the plague breaks out among them, its ravages are not increaſed by fear and deſpair: the ignorance and ſuperſtition of the inhabitants make them wait with reſignation for that death which they imagine to be deſtined for them by the will of heaven.

It

It is among ſuch people that the plague ought to be permanent, and to ſpread daily with a rapid progreſs, if peſtilential miaſmata could remain attached to clothes or other articles, and thus communicate the diſeaſe; for they never take much care to purify the clothes of the infected, or to burn thoſe articles which they uſed during the prevalence of the malady. After the plague has ceaſed, they remain in the ſame places; ſleep on the ſame carpets; wear the ſame dreſſes: and yet the diſeaſe ſtops, and often does not re-appear for ten years.

From theſe conſiderations ſeveral important truths may be naturally deduced.

It is evident that the plague is nothing but continued pernicious fever carried to the higheſt degree of exacerbation. It develops itſelf ſpontaneouſly by a concurrence of the atmoſpheric, local, and individual circumſtances already mentioned. Thoſe affected by it fall ſuddenly into a ſtate of extreme weakneſs, and their bodies ſoon exhibit a manifeſt alteration. The miaſmata which are then diſengaged from theſe bodies ſtruggling againſt a ſpeedy decompoſition, ſoon become the powerful means of propagating the diſeaſe. Theſe miaſmata, indeed, when received into the aërian paſſages, give riſe, by the impreſſion they make on the nerves of theſe parts, to a development of the

phænomena of the plague, as certain gaſeous ſubſtances give riſe to thoſe of aſphyxia.

When continued pernicious fevers appear in very great number, they do not fail ſoon to aſſume a manifeſt character of exacerbation. There is then reaſon to apprehend that the general cauſes of their ſpontaneous development will ſoon be accompanied with the action of miaſmata diſengaged at a certain degree of the diſeaſe, and that the fever, which as yet is merely epidemic, will become powerfully contagious by the inſpiration of theſe miaſmata.

The moſt certain method of checking this kind of contagion is, to place the ſick in ſuch a ſituation that the vapours which exhale from their bodies may be ſpeedily diſſeminated and carried off by the winds. Inſtead, therefore, of ſhutting up infected perſons in their houſes or in hoſpitals, and adviſing the inhabitants to quit the city, the ſick ought rather to be conveyed ſpeedily to the open country, and placed in tents, where the air may have a free circulation around them; and it is certain that, in ſuch a caſe, the effects of the contagion muſt ſoon ceaſe.

What has been here indicated, on a large ſcale, in regard to the plague, may be applied on a ſmall one to the hoſpital fever, which exhibits the ſame mode of contagion. When it is very deſtructive

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in an hoſpital, and threatens to ſpread infection throughout a whole town, as happens in many places during the time of war, the only method of ſpeedily ſtopping the contagion, and putting an end to the mortality, would be to remove all thoſe infected with pernicious fever, from the wards, into galleries expoſed to the open air, or rather to tents erected in ſome neighbouring incloſure. The cold can be no valid objection to this mode of treatment; for one can hardly die of cold in a bed well covered even in the open air; and, on the other hand, thoſe affected with hoſpital fever die ſpeedily.

Nor can any objection ariſe from the ſuppoſed difficulty of paying proper attention to the ſick, when ſo far removed from the edifice where every thing neceſſary is provided for them, as proper drink and furniture form the whole of what is abſolutely required.

INTERMITTENT FEVERS.

105. Having given a hiſtory of thoſe fevers the progreſs of which is continued, it now remains that I ſhould ſpeak of thoſe the attacks of which return regularly at a fixed period, and which during *the intermiſſion* leave the patient in a ſtate of health more or leſs perfect. The ſtriking character by which the latter are diſtinguiſhed, requires that they ſhould be formed into a diſtinct claſs, notwithſtanding the great analogy they ſeem to have, in other reſpects, with the different types of continued fever, and which I ſhall not fail to remark.

106. The moſt common appears almoſt indifferently in the ſpring and autumn, ſometimes in ſummer, and rarely in winter. It is generally preceded for ſome days by an indiſpoſition more or leſs ſtriking, general laſſitude, pains in the limbs and loins, with a derangement of the gaſtric organ, pain in the head, ſlowneſs of the intellectual functions, &c.

The attack of the diſeaſe is marked by a coldneſs of the extremities, and ſometimes by alternations of heat and cold. Theſe ſymptoms are followed by anxiety, nauſea, and a vomiting of green

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or yellowiſh matter. The ſkin is dry, and rough to the touch; the pulſe accelerated, ſmall, and concentrated. The patient experiences great thirſt; the mouth is dry, clammy, and bitter. The cold ſtage, which is ſometimes very ſhort, rarely continues longer than three quarters of an hour.

After irregular fluſhes of heat the whole body ſeems burning hot, and the ſkin becomes dry. The pulſe increaſes, the face appears red and voluminous, and often exhibits greeniſh yellow ſtreaks. The pain in the head is ſometimes inſupportable; the mouth is dry and bitter, the thirſt unquenchable; with pain, or at leaſt great ſenſibility, in the epigaſtrium. Reſpiration is high and accelerated; ſometimes the vomiting continues. The urine, in general, is not very abundant: it is very red, and depoſits a lateritious ſediment.

At length the ſkin becomes moiſt; almoſt all the ſecretions, which had been greatly diminiſhed, are re-eſtabliſhed. Perſpiration is univerſal and abundant; all the ſymptoms gradually abate; and after a pretty calm ſleep the patient finds himſelf nearly in the ſame ſtate as before the paroxyſm.

The paroxyſm recurs in the ſame manner, and nearly at the ſame hour, every third day, leaving a complete day without fever.

This kind of fever, in its general ſymptoms, ſhows a great reſemblance to thoſe called *bilious*.

Of all the intermittents it is that the ſymptoms of which are moſt violent, and which has the moſt rapid progreſs. It often terminates ſpontaneouſly after the ſeventh or the ninth paroxyſm, eſpecially in individuals of a ſound conſtitution, and during the fine ſeaſon of the year.

The treatment in general ought to be, to reſtore the particular derangements in the gaſtro-hepatic organs, and to ſtrengthen the ſyſtem during the days of intermiſſion. *Tertian fever.*

107. A ſecond ſort of intermittent fever, much rarer than the preceding, generally makes its appearance in winter, or in a cold and cloudy autumn; among children, women, and old perſons; individuals of a relaxed and feeble conſtitution; ill-fed and badly clothed; who reſide in cold, damp, dirty, dark, and confined habitations; exhauſted by fatigue, diſeaſes, ſorrow, &c.

It commonly makes its attack in the evening, at night, or in the morning, with a ſenſation of cold and ſhivering; ſometimes with pain in the head, extreme debility, or even ſyncope; vomiting often takes place, and mucous ſtools. The pulſe is weak and unequal, accompanied with a ſlight thirſt. This firſt ſtage is in general much longer than in the tertian fever.

The heat after ſome ſlight and tranſient fluſhes increaſes ſlowly, and becomes univerſal, without ever being

being very violent. The face towards the cheek-bones exhibits large roſe-coloured ſpots on a very pale ground. The patient experiences a dull pain in the head, with drowſineſs more or leſs manifeſt; perceives a ſweetiſh taſte in the mouth, ſlightly bitter, and nauſeous; feels a ſenſation of oppreſſion, or even of pain, towards the epigaſtrium, with a twitching which ſeems to pull the ſtomach towards the back. The thirſt is not ardent. At length, after ſome hours, the fit terminates by an univerſal and moderate ſweat.

The urine, which is at firſt limpid, becomes dark, and depoſits a lateritious ſediment. The face remains pale or aſh-coloured, with a general heavineſs and inactivity of all the ſenſes; the paroxyſms are renewed every day, nearly at the ſame hour.

This kind of fever exhibits all the characters of continued mucous fevers; it proceeds with the ſame ſlow progreſs, and often continues for a long time. When it perſiſts, it generally aſſumes the type of that which I am going to deſcribe, and requires the ſame mode of treatment. *Quotidian fever.*

108. The third form of intermittent fever is diſtinguiſhed by its return every four days. It is much leſs common than the tertian, but much more ſo than the quotidian. It generally attacks the

the ſame individuals at the ſame ſeaſons and in the ſame places as the preceding. It is obſerved, however, more frequently in autumn, after a very warm ſummer, and eſpecially in damp marſhy places, or places ſurrounded by lakes and ponds, the muddy bottoms of which are too ſuddenly abandoned by the water.

It generally makes its attack in the afternoon about four or five o'clock. It announces itſelf by a very ſtriking ſtate of languor; dull, heavy pain in the head, back, and legs; coldneſs of the feet and hands; general paleneſs; livid colour of the face and nails. Soon after the patient experiences a ſort of ſtiffneſs in the limbs, with an univerſal trembling; rapid agitation of the tongue and lips; chattering of the teeth; accelerated and interrupted reſpiration: the whole body is bent, and agitated with a rapid and fatiguing motion. This ſtate of ſuffering is accompanied with a contraction towards the ſternal appendix. The ſkin is often dry and rugous, though the patient experiences a ſenſation of great cold. Sometimes he is coſtive, at others has a continual deſire to make water or go to ſtool. His ideas ſeem often confuſed; he talks inceſſantly, and his words are ſhort, precipitate and interrupted. This firſt period may laſt two, four, and even ſix hours.

A general dry heat, rather diſagreeable than ardent,

dent, comes on ſlowly and progreſſively. The pulſe becomes irregular, more accelerated, and ſtronger. There is always a dull pain in the head, with vertigo. At length, after a longer or ſhorter period, the ſkin becomes moiſt, the heat and other ſymptoms gradually abate, and at laſt totally diſappear. At other times the fits terminate by an abundant ſweat of a long duration. The urine, which at firſt is aqueous, aſſumes a dark tint, and depoſits a lateritious ſediment.

During the two following days the patient, though free from fever, retains a ſenſation of pain in the limbs, and particularly in the legs and feet; experiences a heavineſs in the head; has a dejected air; and when the diſeaſe is of long ſtanding, the face is pale, and more or leſs puffed up.

Sometimes this fever ſucceeds certain eruptions; and at others its ſpontaneous cure is followed by the appearance of different exanthemata.

Every thing in the hiſtory of this diſeaſe indicates its relation with mucous affections: the time when it takes place; the circumſtances by which it is produced; the particular diſpoſition of the individuals whom it affects; the character of its ſymptoms, and their ſlow progreſs; the ſtate of the patient during the intermiſſions; and the obſtinacy of the diſeaſe, which often does not yield but to the influence of the ſpring, or even of the ſummer.

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In this, as in quotidian fevers, it is proper to give a ſtimulus to the gaſtric organs, and to fortify the whole ſyſtem: emetics and ſlight purgatives, mucilaginous draughts, at firſt aromatic and then bitter, &c. may therefore be employed with ſucceſs. In many caſes the paroxyſms ought to be prevented or checked, which is almoſt always in the phyſician's power by perturbing means: but returns after a longer or ſhorter period are ſtill to be apprehended; and when this happens ſeveral times, the beſt courſe is to leave the diſeaſe to itſelf till the next ſpring, when it will be eaſily cured. *Quartan fever.*

109. I have here exhibited the three principal types of intermitting fevers; but there are a multitude of caſes which deviate from them more or leſs. Thus, there is one remittent fever, the paroxyſms of which return every day, reſembling each other alternately one day in two, in regard to the total paroxyſm, and every period of the ſame paroxyſm in regard to the intenſity and peculiar character of the ſymptoms. Theſe ſymptoms retain alſo a great analogy to the bilious fevers, and evidently differ from thoſe of the quotidian. *Double tertian.*

A *quadruple tertian* alſo is obſerved, which produces two paroxyſms one day, and one paroxyſm the following. There is alſo a *double* and *triple quartan.*

Intermittent

Intermittent fevers often exhibit great variety in the return of the paroxyſms, and in the duration of the three periods of the paroxyſm.

The paroxyſms, for the moſt part, return at the ſame hour; ſometimes they are regularly anticipated or retarded. At other times they are abſolutely irregular and uncertain.

Sometimes the cold ſtage is long and violent; ſometimes a rapid and tranſient ſhivering only is obſerved. The period of the hot ſtage, which in general is longer, is ſometimes ſcarcely ſenſible; that of perſpiration is often wanting entirely.

In certain caſes it is difficult to aſcertain whether a fever is intermittent or continued, becauſe no complete intermiſſion, but merely a ſort of remiſſion, with exacerbations determined more or leſs exactly by the three periods of the complete paroxyſms, is obſerved. Some phyſicians are of opinion that there exiſts then, at the ſame time, an intermittent and a continued fever. But this hypotheſis is founded merely on conjecture. Obſervation ſhows, that a fever evidently continued at its commencement aſſumes ſometimes in a few days the intermittent type; and that at other times an intermittent changes into a continued, to become afterwards intermittent.

It is alſo ſometimes very difficult to diſtinguiſh an intermittent from ſome catarrhal fevers, or ſlow fevers which depend on the ſlow progreſs of a phlegmaſia

phlegmaſia in ſome interior organ; becauſe theſe fevers, habitually ſlight, exhibit daily a ſtriking increaſe of intenſity.

Though intermittent fevers approach near to mucous or bilious fevers, according to the type which they affect, it is however certain that their peculiar character is ſingularly modified by the ſeaſon, and the conſtitution of the individual.

Tertian fever belongs almoſt excluſively to the ſpring. It is however obſerved, that during this ſeaſon all the intermittent fevers exhibit more acute ſymptoms and a more regular progreſs, and that they terminate ſpontaneouſly after a ſmall number of paroxyſms. I muſt however except cold damp ſprings, the almoſt autumnal conſtitution of which retards the change produced in the organization by the firſt heats of ſummer.

In autumn all theſe fevers have a ſlower progreſs, and approach more to mucous fevers. It is more peculiarly the ſeaſon of quartan and quotidian fevers, though many tertians are obſerved alſo. At this period all theſe fevers are liable to perſiſt with obſtinacy; and when they continue to the winter they never yield but to the revolution of the ſpring.

Intermittent fevers are obſerved in all places and at all ſeaſons; but they prevail chiefly in ſpring, and particularly in autumn. They appear more readily after violent and long-continued heats, which

which have enervated the gaſtric ſyſtem, and increaſed its ſenſibility in a ſingular manner. They are epidemic in low, damp, and marſhy diſtricts, eſpecially when muddy bottoms are abruptly abandoned by the waters.

The treatment of intermittent fevers muſt be regulated by their type; the conſtitution of the individual; the ſeaſon; the nature of the prevailing diſeaſes, &c. In ſpring they almoſt always terminate ſpeedily of themſelves, and it is ſcarcely neceſſary to employ a few ſlight bitters. But in autumn, and particularly in regard to quartan and quotidian fevers, it is neeeſſary after the firſt five or ſeven paroxyſms to prevent the return of them, if poſſible.

Every intermittent fever, in conſequence of its intermitting, is ſubordinate to the power of art; each paroxyſm is really an acute, rapid, and ſhort fever, the development of which may be prevented at pleaſure. Cinchona well adminiſtered is one of the moſt infallible means; its action is the ſureſt, the moſt durable, and the eaſieſt to be managed. There are a multitude of other means really febrifuge; ſuch as emetics, ſudorifics, narcotics, a ſmart commotion, great exertion of mind, and in general all ſtimulants, employed in ſuch a manner that their action ſhall develop or maintain itſelf at the moment of the febrile attack. In this manner

manner epicarpia or amulets, and a multitude of other ridiculous proceſſes, perfectly uſeleſs in themſelves, but which have often been rendered effectual by the powers of the imagination, may be conceived to exerciſe an action.

110. Intermittent, like continued fevers, are never eſſentially fatal in their ſtate of ſimplicity; but, like the latter, they exhibit a form highly *pernicious*, which for the moſt part is epidemic.

Tertian and quartan fever, but the latter more rarely, exhibit ſometimes *acceſſory ſymptoms* of diſeaſe which develop themſelves, increaſe, and abate, following the courſe of each paroxyſm, and diſappear along with them. Theſe ſymptoms, in ſuch a caſe, deſerve very little attention; but in the pernicious form they rapidly acquire ſuch a degree of exacerbation, that they conſtitute the *eſſential ſymptoms*, and may occaſion ſpeedy death.

It is evident that the number of theſe ſymptoms may be indefinite. Thoſe found by obſervation to be the moſt frequent, and the moſt fatal, are the following:

1ſt. Violent and immoderate evacuation, upwards and downwards, of bilious, green, and exceedingly varied matters, ſometimes highly irritating in their paſſage.

2d. Serous and bloody ſtools, like the waſhings of

of fleſh, no way painful, and at firſt giving little uneaſineſs, but ſoon becoming exceedingly copious and frequent.

3d. A ſenſation moſt dreadfully painful and lacerating in the orifice of the œſophagus, accompanied in general with frequent fits of fainting.

4th. A ſweat, at firſt ſlight towards the ſecond period, which increaſes with the fever, and ſoon becomes diffluent and cold. Sometimes this fatal ſweat does not begin till towards the decline of the paroxyſm; and for that reaſon is more inſidious.

5th. Languor, a proſtration of ſtrength, fainting on the ſlighteſt motion, even of the arm or the hand, &c.

6th. Icy coldneſs at the commencement of the paroxyſm, which continues for ſeveral hours, without the pulſe riſing, and without the heat becoming ſenſible to the touch.

7th. A ſevere comatoſe affection, or profound lethargy, which develops itſelf at different periods of the paroxyſm; which increaſes and declines with it, leaving for the moſt part, at leaſt to a certain degree, drowſineſs during the intermiſſion.

To theſe different ſymptoms, which Torti has exhibited to us in particular hiſtories, exceedingly curious, may be added very acute rheumatic pain, pleuritic pain, convulſions, cephalalgia, ſpitting or vomiting of blood, &c. &c.

In the courſe of one paroxyſm, one of the ſymptoms firſt appears in ſuch a degree that it is impoſſible to determine whether it will become pernicious. During the intermiſſion the tongue remains rough and dry, with extraordinary agitation and uneaſineſs, but without very ſtriking fever or pain; a general indiſpoſition, which occaſions frequent ſighing; repeated nauſea, ſtools entirely bilious, great drowſineſs, &c. In this caſe the return and exacerbation of the ſuſpected ſymptom is to be apprehended for the next paroxyſm. The pulſe alſo is conſtantly depreſſed during the paroxyſms, and even during the intermiſſion.

In one of the following paroxyſms, ſometimes at the ſecond, but for the moſt part at the third, the eſſential ſymptom takes place with the higheſt degree of violence: the ſtrength ſuddenly decreaſes, the pulſe is ſmall, weak, concentrated, and ſometimes almoſt inſenſible; the whole body becomes cold and livid; the viſage ſhrinks, is decompoſed, and exhibits all the characters of the hippocratic face; and if the patient eſcapes the preſent paroxyſm, he will infallibly die at the next, unleſs its development be ſpeedily prevented.

When the intermiſſion is complete and ſufficiently long; when each paroxyſm exhibits three very diſtinct periods, and when the prevailing ſymptom follows exactly all its changes, the diſeaſe may be eaſily

eaſily diſtinguiſhed, and its progreſs may be checked. But in all the contrary caſes it is very difficult to avoid error, whether the interval be filled up by indiſpoſition or by febrile ſtate, the reſult of the fatigue occaſioned by the preceding paroxyſm; whether the paroxyſm prolonged is only approaching towards its end when the following one begins to come on; or whether the paroxyſms, well ſeparated, or taking place the one before the other is ended, follow no regular progreſs. In this caſe, all the ſagacity of the enlightened practitioner is required to guard againſt being ſurpriſed, and to enable him to take advantage of the ſlighteſt indications. He muſt know how to catch the ſudden development of a violent ſymptom, which after ſome hours ſpontaneouſly abates, and then reappears at a determinate day and hour. He muſt obſerve the ſimple remittent or pernicious fevers which prevail at the ſame time; pay attention to the lateritious ſediment of the urine, &c.

In the laſt place, if the fever has become almoſt continued, it will be ſtill more difficult to foreſee the moment of remiſſion, which however is the only one when the victorious means can be applied. In this caſe it will be neceſſary to attend to a mere refrigeration of ſome part; to the paleneſs of the face; the unexpected development of a

cough; to the ſtate of the pulſe, which becomes ſmall, frequent, and concentrated; to yawning; to the renewal of a ſymptom which has appeared at the commencement of the preceding paroxyſms.

Pernicious fevers are frequently obſerved in warm, low, damp countries, ſurrounded by marſhes, lakes, or ponds, the muddy bottoms of which contain a great quantity of animal and vegetable ſubſtances, long macerated under the water, and exceedingly putreſcible, eſpecially when theſe ſubſtances are ſuddenly expoſed to the contact of the air by the retiring or evaporation of the waters. They are found more particularly in places directly expoſed to winds charged with theſe putrid emanations, and particularly when there exiſts a great contraſt between the burning heat of the day, and the damp penetrating cold of the evening and night, or when abundant rains ſuddenly moiſten the mud dried by great heats. But it is only in the caſe of an almoſt complete union of theſe conditions that pernicious intermittent fevers become really epidemic.

Pernicious intermitting fevers, therefore, like *continued fevers* which exhibit that character, ſeem evidently to be produced by the contact of particular miaſmata. The former are developed moſt frequently amidſt marſhy exhalations, and the latter

latter in the neighbourhood of the emanations of animal ſubſtances in a ſtate of putrefaction.

Theſe miaſmata have a much more ſtriking influence on ſtrangers than on thoſe enured to the climate by long habit; and they exerciſe a more powerful action on perſons debilitated by exceſſive fatigue, poverty, anterior diſeaſes, melancholy moral affections, &c.

HÆMORRHAGIÆ.

111. In the hiſtory of Phlegmaſiæ, and eſpecially in that of Fevers, we have frequently met with different kinds of hæmorrhagy. Theſe bloody evacuations were almoſt always acceſſory ſymptoms, for the moſt part critical, and were of no importance to be obſerved but as prognoſtics. But it happens that hæmorrhagies are repeated without any other affection at firſt very apparent, and in this caſe they depend on an eſſential derangement in the nervous action of the vaſcular ſyſtem. Under ſuch circumſtances they are ſuſceptible of acquiring a ſort of periodicity, and become an obſtinate diſeaſe by their long ſtanding, and ſometimes very dangerous by the exceſs of the evacuation.

Hæmorrhagy of the noſe is in ſome meaſure peculiar to infancy and youth; ages at which every thing ſhows, that if there be a ſpecial direction of the vital motions, eſpecially in the vaſcular ſyſtem, this direction is towards the head.

It appears moſt commonly among individuals who lead an indolent life, and who uſe exceſs of nouriſhment. It is often produced by overſtrained exertion of body or mind, by the uſe of aromatic or alcoholic ſtimulants, &c.

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In almoſt all caſes it announces itſelf by ſome of the following peculiar ſymptoms: throbbing pains in the head, fluſhes of heat in the face, redneſs of the viſage, ſparkling eyes, optical illuſions which make objects appear brilliant or red, involuntary diſcharge of tears, painful tenſion in the neck, finging in the ears, deafneſs, accelerated beating of the carotid and temporal arteries, ſwelling of the veins of the head, confined reſpiration, with tenſion or intumeſcence of the epigaſtric region, dreams in which the ſight of blood occurs.

Soon after a heavy pain takes place towards the forehead and the root of the noſe, with an itching of the noſtrils, and the blood at length flows in greater or leſs abundance.

Before and during the hæmorrhagy there is almoſt always obſerved a certain contraction of the ſkin, eſpecially in the lower members, with a ſhrinking of the cutaneous veins; ſhivering; conſtipation more or leſs obſtinate; the pulſe full, hard, and rebounding.

In certain caſes of the diſeaſe we have ſeen ſome drops fall from the noſe on the firſt or fourth day, which announce a naſal hæmorrhagy for the third day after, and at length a favourable termination, when the diſeaſe exhibits, in other reſpects, a regular progreſs. On this ſubject we ſhall refer to the valuable reſults of obſervation collected in the aphoriſtic works of Hippocrates.

In all caſes hæmorrhagy is advantageous when its progreſs is moderate; but ſometimes it is exceſſive, or frequently recurs, and may become troubleſome if not checked by acidulous ſtimulants applied in the noſtrils. In ſome caſes the hæmorrhagy being very abundant is difficult to be checked; the blood flows through the noſtrils, and into the back part of the mouth, and the patient may expire if the whole extent of the naſal foſſæ be not ſpeedily ſtuffed with lint. To render this method infallible, a double thread muſt be made to paſs through the noſtrils by a ſtrong naſal inſpiration; it is then to be drawn through the mouth; and a pledget of lint being made faſt to it, the thread muſt be drawn back through the noſe till the pledget be fixed at the entrance of the poſterior part of the noſtrils: the naſal foſſæ are then to be entirely filled with lint, and the whole muſt be faſtened by means of a knot made at the entrance of the noſe. If the blood flows from both noſtrils, the ſame proceſs muſt be employed for both.

112. At adult age hæmorrhagies of the noſe generally ceaſe of themſelves, and are often ſucceeded by thoſe of the lungs: the latter come on, for the moſt part, between the age of twenty and thirty-five, in individuals who have a vicious conformation of the breaſt, a narrow cheſt, projecting ſhoulders,

ſhoulders, a long ſlender neck, the whole body thin and delicate; in thoſe who poſſeſs great ſenſibility, who are highly irritable, and of a lively diſpoſition; alſo among thoſe who have been ſubject to any hæmorrhagy which has been ſuppreſſed.

Hæmorrhagy of the lungs takes place, for the moſt part, in the ſpring or the beginning of ſummer. It is ſometimes produced by violent reſpiration or any other effort; but, in general, it is the reſult of a particular mode of irritation fixed on the pulmonary organs.

113. It announces itſelf, in common, by a ſenſation of heavineſs and uneaſineſs in the breaſt, confined reſpiration, a pain in ſome parts of the thorax, a ſenſation of heat behind the ſternum. There are often obſerved alſo, at the ſame time, coldneſs of the limbs, ſhivering, ſhrinking of the veins of the hands, rumbling noiſe of the inteſtines, and almoſt always a certain degree of conſtipation.

The patient experiences in the larynx and along the bronchiæ a ſenſation of tickling or itching, which provokes efforts to cough, and a little ſpumous blood of a bright red colour is then thrown up. The irritation continues, and new efforts produce a greater quantity of blood, which iſſues with a noiſe ſimilar to that of air when it traverſes a liquid. The blood is often expectorated as if by an

an undulatory motion, with the aſſiſtance of a very ſlight cough.

The blood firſt begins to appear in ſmall quantity, and ſoon ſtops; but when the hæmorrhagy has been often repeated the blood iſſues in greater abundance, and continues to return for ſeveral days in ſucceſſion.

In ſome caſes the quantity is exceſſive, but rarely ſufficient to occaſion ſudden death.

This hæmorrhagy, cæteris paribus, is leſs dangerous when produced by external violence, a ſuppreſſion of the menſes, &c. than when it ariſes from a peculiar and as it were conſtitutional diſpoſition.

In all caſes it is exceedingly troubleſome when it frequently recurs; ſo that it contracts a ſort of habit, and is accompanied and followed by cough, difficulty of breathing, and various other affections of the lungs. It almoſt always gives riſe to a chronic phlegmaſia, which terminates more or leſs rapidly in pulmonary phthiſis. *Hæmoptyſis.*

114. After the age of thirty-five, and between that period and forty, the hæmorrhagic direction abandons the head and breaſt, and paſſes from the arteries to the veins. The blood then in general flows from the hæmorrhoidal veins. This kind of bloody flux is obſerved chiefly in plethoric, ſedentary individuals, accuſtomed to nouriſhment too ſucculent, and particularly among thoſe deſcended

ſcended from parents ſubject to the ſame affection.

This affection, for the moſt part, is preceded by a general indiſpoſition, or by a variety of diſorders in different parts of the body.

The patient experiences within or around the anus a very diſagreeable and often very painful ſenſation of fullneſs, heat, and itching; for the moſt part a ſort of conſtipation, with a frequent deſire to go to ſtool, and pains often very acute occaſioned by the paſſage of the hardened fæces. Sometimes a diſcharge of mucous matter takes place; the diſcharge of blood which then follows is preceded, in ſome caſes, by a certain febrile ſtate.

This diſcharge exhibits great variety in regard to its quantity and duration. Sometimes nothing comes off but whitiſh mucous matter, and a few drops of blood which exude during the efforts made at ſtool. At other times the blood flows at intervals, and in great abundance: this caſe, however, never occurs during the firſt appearance of the hæmorrhoidal flux. In ſome caſes the diſcharge of blood is ſo abundant and rapid that the ſtrength decreaſes, and there enſues a ſpeedy waſting, with ſwelling of the feet, puffed up appearance of the face, pale leaden colour, confined reſpiration, dropſy, &c.

Before the diſcharge of blood manifeſts itſelf, there are always formed within or around the anus

anus ſmall knotty tumours, which have been ſuppoſed to be formed by the dilatation of the veins, but which ſeem to be produced by an effuſion of blood into the cellular tiſſue. When recent they contain blood pretty pure, and are ſoft to the touch. In the courſe of time they become firm, and exhibit a ſort of ſcirrhous induration. Theſe tumours are often very painful; ſometimes they occaſion a phlegmon, the ſuppuration of which gives riſe to a fiſtulous ulcer, with permanent induration. At other times theſe indolent tumours, which ariſe in great numbers and of a large ſize, have a narrow pedicle, ſo that they can be removed by reciſion.

Hæmorrhoidal flux depends, for the moſt part, on other cauſes than a ſuperabundant quantity of blood. The firſt attacks often ariſe from habitual conſtipation, and from all cauſes which create a mechanical obſtacle to the progreſſion of the blood in the whole ſyſtem of the ſub-hepatic vein (vena portæ): ſuch as voluminous and hardened fæces too long retained; conſtriction of the interior membrane of the rectum inverted or prolapſed; development of the uterus in pregnancy. In common, there exiſts alſo an organic alteration; an habitual ſwelling in ſome of the viſcera comprehended in the hepatic venous ſyſtem. *Hæmorrhois.*

115. Vomiting of blood is, for the moſt part, the

the conſequence of violent efforts to vomit; of a violent contuſion in the epigaſtrium, or of ſome wound which affects the ſtomach. When it takes place ſpontaneouſly, it is almoſt always in the caſe of a ſuppreſſion or derangement of the menſtrual or hæmorrhoidal flux. It rarely appears in acute diſeaſes, without the concurrence of one or the other of theſe affections.

Before it comes on, the perſon always experiences a ſenſation of heavineſs and uneaſineſs towards the ſtomach; with ſhivering and a ſort of conſtriction in different parts of the body. The pains in the epigaſtrium often proceed to ſuch a length as to threaten a ſpeedy ſyncope. The pulſe is ſmall, hard, and very much concentrated. Nauſea takes place, and is followed by a vomiting of blood, ſometimes red and almoſt pure, ſometimes browniſh, partly coagulated in general, but never ſpumous and florid.

Sometimes the blood is mixed with matters which evidently come from the ſtomach. The pains ceaſe with the vomiting, and are often renewed with it the ſame day, and ſometimes the following days.

In general, a certain quantity of blood paſſes into the inteſtines; and the ſtools which take place for ſeveral days exhibit a black tint more or leſs ſtriking.

Theſe hæmorrhagies are never dangerous; yet, when

when they frequently recur at the periods of menſtruation, they acquire a power of habit which it is difficult to overcome. *Hæmatemeſis.*

116. There is ſtill another ſort of bloody vomiting, which belongs more particularly to old age. It takes place, for the moſt part, in individuals who lead a ſedentary life; worn out with poignant ſorrow long continued, and in whom every thing announces a chronic affection of the abdominal viſcera. In this caſe the matters thrown up by vomiting appear to have remained a long time in the ſtomach or in the inteſtines; they are brown or blackiſh and pitchy, and evidently contain coagulated blood. Theſe vomitings, which are always preceded by fits of fainting, are in general repeated ſeveral times. The ſtools, highly fetid, are alſo black and pitchy, and are almoſt always preceded by fainting. The patient often falls, in a moment, into a ſtate of extreme weakneſs, or into a ſort of inſenſibility.

In this affection there is found, for the moſt part, a ſcirrhous ſwelling of the pylorus or the ſides of the ſtomach, a chronic affection ſometimes of the liver, the ſpleen, the meſentery, &c.; and in this caſe there no doubt exiſted an obſtruction in ſome points of the ſyſtem of the ſub-hepatic vein.

This diſeaſe is always exceedingly alarming;

it is alſo very difficult to diſtinguiſh thoſe caſes where evacuation may be of advantage, from thoſe where it may become fatal.

The means which ſeem to have been attended with any ſucceſs are thoſe which tend to expel from the inteſtines the half-putrid blood they contain, by giving a ſtimulus to their weakened action; and thoſe which are calculated to ſupport the ſtrength in general. *Morbus niger*, (*Melæna.*)

117. Voiding of blood by urine is, for the moſt part, the conſequence of a calculous nephralgia, a violent contuſion on the lumbar region, in the flank, on the hypogaſtric region, and particularly in the perinæum. Sometimes it ſeems to ſupply the place of menſtrual flux. In ſome caſes it takes place after violent exerciſe on horſeback, or the uſe of certain acrid ſubſtances. Sometimes it occurs like paſſive hæmorrhagy in pernicious fevers and ſcurvy.

Hæmorrhagy exhibits alſo in its progreſs numerous varieties, according to the place from which it originates, and the cauſes which produce it. When its appearance has been preceded by calculous nephralgia, and when the blood iſſues of a black colour, in clots or filaments moulded in the urethra, there is reaſon to ſuppoſe that it comes from the reins. When preceded or accompanied by a ſharp pain above the pubis, or towards the

the perinæum, and when it is red and fluid, there is reaſon to ſuſpect that it comes from the bladder: it may however proceed from the bladder, and coagulate in its cavity. As the blood which has acquired a concrete form in the bladder cannot eaſily eſcape, it often produces in it moſt acute pains.

The preſence of blood in the urine may be aſcertained by its red or browniſh colour, and by the depoſit which the coagulum ſoon forms. This depoſit, which at firſt is reddiſh, becomes ſometimes gradually pale, and in a few days turns whitiſh. Very red urine, which does not contain blood, depoſits a lateritious ſediment.

Voiding of blood by urine is not of itſelf dangerous; it is fatal only when it becomes in ſome meaſure periodical. *Hæmaturia.*

118. *Irregularities in the menſtrual flux* are connected, in a certain degree, with the hiſtory of hæmorrhagiæ; and though they belong more particularly to the functions of the ſyſtem of generation, we ſhall here ſay a few words reſpecting them.

Exceſs of menſtrual evacuation may ariſe from a local affection of the uterus; it takes place after parturition or abortion. During menſtruation it may be produced by various accidents: ſuch as a tranſport of paſſion, exceſs of venereal enjoyment, violent exerciſe, the abuſe of ſtimulants, &c.

 A deficiency

A deficiency of this habitual flux is oftener obſerved than an exceſſive abundance of it. Menſtruation may decreaſe by the influence of long continued grief, and of all other cauſes which tend to produce a gradual debilitation of the conſtitution in general. In ſome caſes a very violent commotion, the ſudden impreſſion of ſtrong cold, &c. may ſuppreſs it entirely.

This diminution or total ſuppreſſion is often accompanied with hæmorrhagies, ſometimes exceſſive, which take place from different parts; and at the ſame time a great derangement is almoſt always obſerved in the exerciſe of the various functions.

Retardation of the firſt menſtrual flux exhibits, in particular, a combination of very remarkable phænomena; ſuch as general laſſitude, oppreſſion, pain in the head, univerſal paleneſs, ſometimes œdematous ſwelling of the different parts, pains in the loins and towards the pelvis, &c.

The particular ſtate of the individual, and the circumſtances which have concurred towards the retardation or ſuppreſſion of the menſtrua, ought to ſerve as a guide in regard to the choice of the means beſt calculated to produce or re-eſtabliſh the flux, and to ſhow when it is proper to employ a ſtimulant at the habitual period, ſtill indicated by efforts which fail to produce their effect: tonics,

and various corroborants, pediluvium, emollients applied to the genital parts, &c.

The ceſſation of the menſtrua at the natural period is, in general, attended with no danger among women who have lived in a manner agreeably to the wiſhes of nature; who have had children, or who have led a life of activity. But the caſe is different among thoſe who have remained in a ſtate of celibacy, and who have been brought up amidſt idleneſs and opulence; among thoſe who have made too free with ſpiritous liquors, and whoſe menſtrua have been habitually very abundant. Among ſuch individuals very ſtriking irregularities are obſerved in the periodical evacuation, which is exceſſive and of ſhort duration, or continued for weeks and even for months; ſometimes alternations of ſuppreſſion and entire ceſſation take place; in certain caſes chronic affections of different kinds come on; and even ſometimes acute phlegmaſiæ, active hæmorrhagies, apoplexy, &c. *Menorrhagia.*

119. Hæmorrhagies, in general, take place in robuſt ſedentary individuals, who habitually uſe to exceſs nouriſhment too ſucculent; and particularly in thoſe deſcended from parents ſubject to effuſions of blood of ſome kind or other. They take place for the moſt part in ſpring, at the commencement

mencement of ſummer, when the energy of the vital functions acquires a great increaſe.

They are almoſt always preceded by a ſeries of phænomena, which evidently announce a derangement in different parts of the ſyſtem, and peculiar ſymptoms which indicate a ſpecial action of the organic forces towards the part where the blood is about to iſſue.

The part from which the hæmorrhagy is about to take place experiences an uneaſy or painful ſenſation of tenſion and plenitude, with heat, itching, redneſs, and even ſwelling. There come on at the ſame time, in the diſtant parts, a peculiar ſtate of conſtriction, ſhivering, or a very ſtriking ſenſation of cold. At length the blood flows for a longer or ſhorter period, and ſpontaneouſly ceaſes; the general indiſpoſition then abates; and the pulſe, which was before frequent, full and hard, reſumes its natural courſe.

Theſe different phænomena are not obſerved in hæmorrhagies which reſult from a wound; but they precede thoſe which appear in the courſe of fevers, or acute phlegmaſiæ; they are obſerved alſo, in part, in thoſe which have degenerated into habit, and even in the natural flux of menſtruation.

In the firſt two periods of life hæmorrhagies are, for the moſt part, arterial; in the laſt two they are venous.

In children, till the age of puberty, the predo-

minance of the vital action ſhows itſelf towards the head; this is the period of naſal hæmorrhagies, which generally decreaſe and diſappear of themſelves towards the fifteenth or twentieth year.

After adoleſcence, and till the age of thirty-five and forty, hæmorrhagies commonly take place in the thorax. In this caſe they appear ſometimes to be a conſequence of the habit of naſal hæmorrhagies; but, for the moſt part, they are produced by a ſtate of chronic irritation in the breaſt.

In the third and fourth period of life the blood flows, in general, from ſome points in the ſyſtem of the vena portæ; for the moſt part from the hæmorrhoidal veſſels; leſs frequently from thoſe of the bladder, and more rarely from thoſe of the ſtomach. In the laſt place, in extreme old age, it flows ſometimes from the encephalic veſſels.

The quantity of blood which a perſon may loſe, without danger, is ſometimes very great, eſpecially when it flows ſlowly. Under ſome circumſtances the blood is renewed with wonderful facility; and this faculty becomes one of the cauſes of the ſpeedy renewal of the hæmorrhagy, which afterwards gradually acquires a ſort of habit.

Many phyſicians, the followers of Stahl, too confident in the healing powers of nature, have ſuppoſed that every hæmorrhagy ought to be reſpected, favoured, even excited, and never checked unleſs it be exceſſive.

It

It is certain that a hæmorrhagy which appears with all the ſigns of a ſalutary motion in the courſe of an acute phlegmaſia, or a continued fever, ought to be reſpected and even favoured; the too abrupt ſuppreſſion of it might be followed by various diſorders, ſometimes exceedingly ſevere: there is no reaſon to apprehend that an hæmorrhagy of this kind will ever become habitual. But, in almoſt every other caſe, means ſhould be uſed to moderate the force of a hæmorrhagy, and to prevent its return.

Hæmorrhagic habits may be prevented, in a particular manner, by proper regimen, ſobriety, exerciſe, &c. An exiſting hæmorrhagy may be moderated by diet, reſt, cold acidulous beverages; the application of cold to a part correſponding to that from which the blood flows; by all ſtrong and ſudden affections. A hæmorrhagy which ſeems to endanger the life is immediately ſtopped by a ligature, compreſſion, acids, and even the cautery, according to the different caſes.

120. In deſcribing the acute phlegmaſiæ and fevers, in particular, we have often mentioned *critical* ſymptoms, which occurred chiefly towards the end of theſe diſeaſes: we ſhall now endeavour to account for theſe phænomena.

Critical ſymptoms are obſerved in diſeaſes where there is a general derangement of the nervous ac-

tion, with derangements more or leſs ſtriking in the different functions.

In acute diſeaſes, the ſalutary or fatal termination takes place often at an indeterminate period, in a very ſlow manner, and as we may ſay without any ſenſible *criſis*. But very often it takes place at a fixed period: which has given riſe to the obſervation of *critical days*, ſo called becauſe they are commonly ſalutary or fatal to the patient, and enable the phyſician to form ſome *opinion* in regard to the diſeaſe.

There is obſerved alſo, at this period, in each ſyſtem of the organs, a combination of peculiar phænomena, which precede the re-eſtabliſhment of their habitual function, and are the indirect ſigns of the general ſtate of convaleſcence, which begins to be effected. Theſe phænomena are diſtinguiſhed by the name of *criſes*.

In all diſeaſes characterized by a general derangement, each function is deranged in a manner peculiar to itſelf, and exhibits a ſeries of particular phænomena: on the return of health each of theſe functions recovers its former ſtate, and exhibits ſymptoms more or leſs remarkable. Theſe ſymptoms, in general, are the more apparent, as the derangement of the function has been greater, and of longer continuance.

Thus, when the function of the kidneys is deranged, their ſecretion is diminiſhed, increaſed or changed;

changed; the urine is in ſmall quantity, red and ſcorching, or limpid and very abundant. When general tranquillity is about to be re-eſtabliſhed, the ſecretion of the kidneys tends to return to its former ſtate; but it never does ſo without exhibiting a particular character. Thus, the urine before it recovers its uſual ſtate is ſweet, turbid, nebulous, full of ſediment; and as urine in this ſtate immediately precedes the natural urine, it is called *critical.*

The caſe is the ſame with the cutaneous organ, the ſecretions of which may alſo be increaſed, diminiſhed, or changed, in the courſe of an acute diſeaſe: the ſkin is then arid, burning hot and dry, or furniſhes an abundant, clammy, cold ſweat in large drops. When the habitual ſecretion is about to be re-eſtabliſhed, there comes on a gentle and univerſal perſpiration, which gives relief: it is called the *critical ſweat.*

Similar phænomena are obſerved in the alvine ſecretions, thoſe of the liver, &c.

Thus, each function deranged during the courſe of an acute diſeaſe returns to its firſt ſtate, exhibiting peculiar *characters*, more or leſs ſtriking, which are called *critical.*

All the organs and even the intellectual exhibit analogous phænomena. Thus, in continued pernicious fevers, the derangement of that function is announced by a ſlight delirium, an abſolute loſs of

intellect, or a violent tranſport; and the individual, before he recovers his uſual ſtrength of mind, often exhibits for ſome time a very peculiar air of intoxication and ſtupidity.

In perſons ſubject to hæmorrhagies of the noſe, to hæmorrhois, and in caſes of retarded menſtruation, if an increaſed action takes place during the courſe of the diſeaſe, or a hæmorrhagic effort, manifeſted by the appearance of ſome drops of blood, a hæmorrhagy may be predicted, which commonly takes place on one of the critical days. At that period the ſymptoms of general affection, for the moſt part, ceaſe: an excretion either habitual or become neceſſary muſt ſhow itſelf in preference.

Theſe reflections are ſufficient to explain what is meant by a criſis in diſeaſes, and to convey a proper idea of the *character of critical evacuations.*

121. After having taken a general view of all thoſe diſeaſes which are accompanied with a manifeſt alteration in the ſtructure of the different organs, *(phegmaſiæ)*, and after having given a hiſtory of the various derangements which take place in the whole of the organization, *(fevers)*; it remains that we ſhould exhibit the different modes of affection which the organs are ſuſceptible of in the exerciſe of their functions. Theſe numerous affections, a great part of which are commonly diſtinguiſhed

diſtinguiſhed by the name of NERVOUS, may be comprehended under four principal heads.

In one, the patients exhibit a ſtate of drowſineſs more or leſs ſtriking. *Comatoſe affections.*

In the ſecond, a greater or leſs weakneſs is obſerved in the exerciſe of ſome particular function. *Aſthenic affections.*

In the third, the organs deranged in their action perform their functions with trouble and diſorder. *Convulſive affections.*

The laſt comprehends the derangements exhibited by the intellectual organ in the diſcharge of its functions. *Veſanic affections.*

COMATOSE

COMATOSE AFFECTIONS.

122. THERE is a certain affection which conſiſts in the ſudden loſs of ſenſation and motion. This affection for the moſt part is the ſymptom of ſome other diſeaſe; but in particular caſes it appears to be an eſſential derangement.

It is obſerved moſt commonly among individuals whoſe nervous ſyſtem is exceedingly weak and irritable.

The principal cauſes which ſeem to produce it, or the circumſtances by which it is preceded, are: a ſudden diminution of the afflux of blood towards the brain; a hæmorrhagy, often very ſlight but ſudden, while the individual is in an upright poſture; a conſiderable alvine evacuation; parturition; a ſudden fright, certain odours, &c. In the laſt place, a local affection of the heart and of the large veſſels.

The attack of this diſeaſe is ſometimes ſudden and violent; at other times ſlow and gradual: in the latter caſe it is generally announced by a ſenſation of languor and uneaſineſs towards the region of the heart, accompanied with, or immediately followed by, vertigo, dimneſs of ſight, and a ſinging in the ears. Soon after a weakneſs of the pulſe and of reſpiration is obſerved: theſe functions become inſenſible,

inſenſible, or entirely ceaſe. At the ſame time the face grows pale, the eye-lids are relaxed; a coldneſs, more or leſs ſtriking, takes place in the whole body, with a flexibility of the limbs, cold ſweat on the forehead and other parts, weakneſs and ſometimes complete interruption of the intellectual functions. At the end of a ſhort period the paroxyſm often ceaſes ſpontaneouſly, and almoſt always leaves a ſenſation of univerſal laſſitude, and of anxiety towards the heart.

When the individual begins to recover, it is obſerved that the pulſe is never re-eſtabliſhed as long as the paleneſs and cold remain.

This affection, when it frequently occurs and is carried to a high degree of intenſity, is always troubleſome.

A horizontal poſition and the application of different ſtimulants are the means proper for ſhortening the duration of the paroxyſm of this affection, which has been diſtinguiſhed by the name of *ſyncope*.

123. When a weak individual, exhauſted with fatigue, intoxicated, &c. abandons himſelf, through want of means or of courage, to that inactivity which is generally produced by long expoſure to very cold air, he firſt experiences a ſenſation exceedingly diſagreeable, and then a torpor and numbneſs, which begin at the extremities of the limbs,

limbs, and ſoon ſpread to all the organs ſubject to voluntary motion. A progreſſive diminution of movement and ſenſation ſoon comes on, with an inclination to ſleep, which gradually increaſes, and at length becomes irreſiſtible. Soon after, the motion of the thorax and the beating of the pulſe ceaſe, and all ſigns of life diſappear.

Sometimes, life abandons only certain parts, which are always thoſe moſt expoſed to the air and furtheſt diſtant from the heart.

Such accidents are uncommon in our climates; they happen for the moſt part in the neighbourhood of the poles, and frequently occur in mountainous countries, where the continuance of the ſnow and ice perpetuates the ſeverity of winter. In ſuch caſes, the mountaineers who inhabit the Alps adopt a practice which is founded on experience. They know that between real death and the loſs of ſenſation and motion there is an interval, no doubt variable, during which it is ſtill poſſible to recall all the ſigns of vitality, and life. They therefore ſtrip the body quite naked, and rub it ſome time with ſnow; they afterwards immerſe it in cold water, which they gradually warm ſo as to avoid any ſudden tranſition, and to reſtore heat in a progreſſive and uniform manner to every part of the body.

The too ſudden application of caloric would be fatal: in the ſame manner, the ſudden tranſition from

from a very high temperature to a degree of cold ſupportable under any other circumſtance, has ſometimes produced gangrene. *Action of cold.*

124. The function of the pulmonary organ may be interrupted, or the organ itſelf may be ſuddenly affected by different cauſes; and in either of theſe caſes derangements exceedingly dangerous, and very often ſudden death, may be the conſequence. We ſhall here give the hiſtory of the different caſes of theſe diſeaſes.

125. In the puniſhment of the halter convulſive movements are obſerved, and ſoon after perfect immobility. The face ſwells and becomes livid; the eyes remain open, red and projecting; the tongue acquires a large volume, and partly iſſues from the mouth; foam ſometimes appears on the lips*, the mouth is diſtorted, &c.

There are many inſtances of perſons executed in this manner, who, though not cut down till a conſiderable period had elapſed, recovered the exerciſe of all their functions, either ſpontaneouſly or by the uſe of different ſtimulants†; but in

* This is not always, as Hippocrates ſuppoſed, a conſtant ſign of death.

† All thoſe reſtored to life after being hanged, declare, that as ſoon as the nooſe was drawn tight they were ſuddenly ſtruck with ſtupor and perfect inſenſibility.

general

general ſuſpenſion is followed by real death, either becauſe it has continued too long, or becauſe it has produced organic derangements too conſiderable.

On examining the bodies after death, the alterations in the face already mentioned are obſerved. It becomes pale and ſhrinks on opening the jugular veins; a ſpumous matter is found in the bronchiæ; ſometimes the ſcrotum is echymoſe, and the penis in a ſtate of erection. Dr. Harvey, who frequently opened the bodies of ſuſpended criminals ſoon after their death, ſeveral times found the lungs much diſtended with blood, and the right auricle dilated to the ſize of the fiſt. But at the end of a day this dilatation diſappeared, the blood having iſſued from it ſpontaneouſly. The body retains its heat for a conſiderable period; ſometimes it is even increaſed during the firſt moments after death, and in general the blood remains fluid.

Sometimes the veſſels are found ruptured, and extravaſated blood is obſerved in the cranium; the larynx is cruſhed, its muſcles or membranes are torn, and luxations of the firſt cervical vertebræ take place.

The death of hanged perſons ſeems to be produced chiefly by obturation of the aërian paſſages, which prevents the introduction of air into the lungs. This principal cauſe is often combined with others: ſuch as conſtriction of the jugular veins,

veins, and derangements, but theſe are more rare, which the weight of the body and the pulling of the executioner produce in the larynx and the cervical column*.

Strangulation, by means of a cord drawn tight around the neck, produces the ſame phænomena as ſuſpenſion, a few accidents excepted, which, as already ſaid, depend merely on the weight of the body.

126. Every obturation of the trachea produces very ſpeedily apparent death, which may ſoon become real†; but for the moſt part the ſigns of life may be recalled merely by rendering the aërian paſſages again free. Sometimes the artificial introduction of air into the lungs is employed, and the application of different ſtimulants.

Inſurmountable obſtacles oppoſed to the motion of the thorax, a ſtrong compreſſion of that cavity

* See Morgagni de Sedibus et Cauſis Morborum, Epiſt. xxx.

† Druſus, the ſon of the emperor Claudius, was ſuffocated by a pear which ſtuck in his throat. We read in the Sepulcretum of a young man who died ſuddenly in conſequence of a piece of meat ſticking in the larynx. Anacreon it is ſaid was ſuffocated by the ſtone of a grape. A child four or five years of age, whoſe glottis was found to be exactly cloſed by a bean, fell down dead without any cry or convulſive movement. (See Bibliotheque Brit. tom. xiii. p. 254.) In a word, children are ſometimes reduced to a ſtate of aſphyxia in the cradle, by the application to the mouth and noſtrils of the pillows, which they are not able to free themſelves from.

and

and of the abdomen, palſy of the muſcles of the thorax, produced by ſolution of the ſpinal marrow, are alſo cauſes of aſphyxia.

It is not uncommon after long and laborious parturition to ſee feeble children brought forth without any ſigns of life, probably becauſe the action of the air is not then ſufficiently ſtrong to give motion to the pulmonary organs; and in many caſes theſe children have been preſerved by employing means capable of exciting or reviving reſpiration.

127. If an animal be placed under the receiver of an air pump, on the firſt ſtrokes of the piſton it appears uneaſy; in proportion as the air is exhauſted its uneaſineſs increaſes, and its reſpiration becomes ſhort, difficult and accelerated. The ſize of the animal is often increaſed; ſometimes it evacuates by the mouth and anus; it at length falls into convulſions, and all the external ſigns of life diſappear.

If air be ſpeedily admitted to the animal, it may be recalled to life; but, in general, it rarely lives long after it has been thrown into a complete ſtate of aſphyxia by this method. In this caſe, the aërian paſſages remain free; but there is not a ſufficient quantity of air to maintain reſpiration. It does not, however, appear that the want of air is the only cauſe of aſphyxia: the too ſudden removal

removal of that uniform and conſtant preſſure which the organs are accuſtomed to ſuſtain, contributes towards it alſo in a very great degree. In a large receiver, the air of which is rarefied ſlowly, the animal will live under a preſſure far below that which proves fatal to it when the air is ſuddenly rarefied*. But the want of air is always the cauſe of death at the end of a certain period.

128. When a man is completely immerſed in water, his pulſe becomes weak and accelerated; ſoon after he experiences confinement in the breaſt, anxiety, and great agitation; he makes ſeveral partial and ſucceſſive expirations, then efforts to inſpire, and in this caſe a certain quantity of water† is introduced into the bronchiæ, and ſometimes into the ſtomach. At length the viſage, and particularly the lips, acquire a blueiſh tint; the ſphincters become relaxed; a complete loſs of motion and ſenſation take place, and the pulſe entirely ceaſes.

* By ſpeedily exhauſting the air, cats have been reduced to a ſtate of aſphyxia, when the mercury ſtood at twelve inches; whereas by making a vacuum ſlowly, and habituating them to that ſtate by repeated trials, they may be made to live under a preſſure of 7, 6, and even 5 inches.

† It may be known by its colour, when an animal has been immerſed in coloured water. None is found in an animal if reduced to a ſtate of aſphyxia before it be immerſed. *Goodwin.*

All theſe phænomena occur in the courſe of a few minutes. The body ſoon becomes cold if it remains in the water: yet death is ſtill only apparent; and if the body be taken from the water, life returns, either ſpontaneouſly, or by artificial reſpiration and the uſe of proper ſtimulants. But, at the end of a certain period, which it is difficult to determine, life ceaſes entirely.

The ſmall quantity of water introduced into the bronchiæ, and particularly the withdrawing of caloric by the water during cold ſeaſons, contribute to render the aſphyxia more complete and more dangerous.

On opening the body, a darker colour is obſerved at the ſurface of the brain, without any turgidity of the veſſels or extravaſated blood; the epiglottis is raiſed up, the glottis is open, and a ſmall quantity of ſpumous liquid is found in the bronchiæ; the veins and pulmonary arteries are full of black blood, as well as the two auricles and the right ventricle; the left ventricle is only half filled with blood of the ſame colour: the blood, in general, is pretty liquid: and this perhaps may ſerve to explain why a reddiſh exudation is ſeen with bloody foam around the noſe and mouth of perſons who have been drowned.

When the body has remained ſeveral days under water, the belly is much diſtended, the thorax projects, and the lungs are ſo dilated that the air

air eſcapes with impetuoſity as ſoon as the breaſt is opened. Theſe phænomena depend on the preſence of the gaſes developed by the commencement of putrefaction.

The introduction of water into the ſtomach does not in any manner contribute to produce the aſphyxia, and very little of it penetrates into the bronchiæ*. The aſphyxia then is produced, as in the former caſe, by the ſuſpenſion of reſpiration; and the animal immerſed in water finds itſelf as in rarefied air, without any remarkable change in the atmoſpheric preſſure.

All animals with lungs loſe by ſubmerſion the external appearances of life; but they loſe them at periods which vary for each order of animals, and which, in general, depend on the common frequency of their inſpirations. All theſe animals alſo are reduced ſooner or later to a ſtate of aſphyxia by ſubmerſion in a medium, whether liquid or aëriform, which does not contain a ſufficient proportion of oxygen gas.

129. Oxygen gas properly diluted with azotic gas is the only kind proper for maintaining the reſpi-

* Goodwin aſſerts, that having introduced into the trachea of cats held in a vertical poſition, a quantity of water, double at leaſt to that which enters their bronchiæ during ſubmerſion, the only reſult was a difficulty of reſpiration and a weakening of the pulſe, both of which ſoon diſappeared.

ration of animals with lungs: all the other kinds *ſuffer them to die*, or *deſtroy them*.

Pure oxygen gas exerciſes on the lungs too powerful an excitement; it exalts the nervous action, and waſtes too ſpeedily the ſtrength.

An animal incloſed in a certain quantity of atmoſpheric air, which has no means of being renewed, at length loſes all ſenſation and motion. It is then found that the greater part of the oxygen gas has been conſumed, and that the portion which remains has become unfit for maintaining combuſtion. In this manner, a great number of perſons, when ſhut up in a narrow confined place, where the air is not renewed, may be reduced to a ſtate of aſphyxia; but in this caſe there are many other cauſes which in general render ſuch aſphyxiæ ſpeedier and more dangerous, as will be hereafter ſhown.

An animal can reſpire for a conſiderable time, though with difficulty, in azotic and hydrogen gas; but it at length is reduced to a ſtate of aſphyxia; ſo that azotic and hydrogen gas do not kill animals ſpeedily, but ſuffer them to die ſlowly. The lungs receive them without appearing to be affected by their action; the play of reſpiration is not interrupted; and the animal dies only becauſe the lungs remain too long without receiving oxygen gas, the influence of which is neceſſary for maintaining life.

An

An animal lives longer in these two gases than when subjected to suspension or strangulation, to submersion in water and under mercury, or to a vacuum; because in all these cases there is not only a privation of oxygen, but the play of the pulmonary organs is suddenly interrupted; whereas in azotic and hydrogen gas it continues to take place.

All the other known gases* produce on the nerves of the lungs an impression which is communicated to the brain, and occasions a general derangement. The animal experiences some convulsions, and speedily loses all the external signs of life.

The non-respirable gas, to the action of which a person is most liable to be exposed, is the carbonic acid gas; it kills animals very speedily, even when applied in a small quantity †.

This gas is that disengaged from beer-, cider-, and wine-casks, when these liquors are in a state of fermentation, from the furnaces in which lime-

* The known gases, the inspiration of which even in small quantity produces sudden asphyxia, are: carbonic acid gas, and the gaseous oxide of carbon; carbonated, sulphurated, or phosphorated hydrogen gas; oxygenated muriatic acid gas, nitrous gas, ammoniacal gas, &c.

† A Guinea-pig, exposed to a mixture of two-thirds carbonic acid gas, and one-third oxygen, was reduced to a state of asphyxia in one minute, that is, as speedily as it would have been by exposure to pure carbonic acid gas.

ſtone is calcined, and from thoſe in which charcoal is burnt*.

This gas is much heavier than atmoſpheric air, and always remains at the loweſt part of thoſe places where it is diſengaged; it is alſo very ſoluble in water, ſo that it may be eaſily got rid of by employing a current of air, which carries it away, or water, which abſorbs it.

It frequently happens that perſons are reduced to a ſtate of aſphyxia by being ſhut up in a cloſe apartment, without a chimney, in which charcoal is burnt. The aſphyxia, in this caſe, is produced by the diſengagement of carbonic acid gas; and when the charcoal begins to burn with a light blue flame, there is then diſengaged carbonated hydrogen gas, the fatal action of which ſeems to be ſtronger and ſpeedier than that of the carbonic acid gas: the proportion of oxygen diminiſhed by combuſtion contributes alſo to increaſe the accidents. Perſons thrown into a ſtate of aſphyxia by carbonic acid gas, whatever may be the ſource from which it ariſes, experience firſt a violent pain in the head, a ſenſation of ſtrong preſſure on the

* It is carbonic acid gas of this kind which is found in the *Grotto del Cane*, near Naples, and in that of Pyrmont. That found in ſome deep vaults, and in the ſubterranean galleries of certain mines, is probably of the ſame nature. In the latter places hydrogen gas is ſometimes found alſo.

temples,

temples, vertigo, and ſometimes nauſea. The difficulty of breathing afterwards increaſes; violent palpitation of the heart takes place, with a trembling of the limbs, confuſion of ſight, ſinging in the ears, deafneſs, and at length ſyncope. The individuals then fall down, and are entirely immerſed in the carbonic acid gas; a circumſtance which greatly contributes to aggravate their ſtate. In ſome caſes the individuals ſlowly experience a ſort of drowſineſs, which ſoon becomes mortal.

In all theſe caſes, the animal heat continues for ſome time, and the limbs remain flexible; the eyes project; the viſage is ſwelled and red; and the arterial blood retains its florid colour, at leaſt when death has been occaſioned by carbonated hydrogen gas.

130. Theſe aſphyxiæ naturally conduct us to that to which nightmen, and thoſe who clean privies and common ſewers, are expoſed. The latter takes place at different periods of the labour, when certain ditches are cleaned, ſometimes after the emptying of privies and ſewers, and particularly when the workmen receive the emanations in their faces: very often when they attack the *thick matter*; and ſometimes when they arrive at the *hard* or *ſolid matters*, on touching a certain determinate point, they are ſuddenly ſtruck with aſphyxia. Sometimes they are expoſed to it during the whole

courſe of their labour. In general, however, when the pernicious matter has ceaſed to ſhow its effects, the workmen imagine that nothing further is to be apprehended. A labourer who has been already attacked is expoſed to more danger than another, and will infallibly be firſt ſtruck if he reſume his work before he be completely recovered. In a word, this malady is ſometimes communicated to thoſe who approach the mouth of a perſon in a ſtate of aſphyxia; but this communication takes place chiefly when there iſſues from the mouth a peculiar odour, which is conſtant and well-known. Sometimes the effects of this communication do not appear till the end of ſeveral days: at other times they are ſudden.

Thoſe who are employed in cleaning ſewers, privies, &c. diſtinguiſh five forms of aſphyſixia:

1ſt. The labourer gently falls aſleep, ſometimes while at work; ſometimes in the open air, and drops down without any convulſions. He then recovers, making long and ſtrong inſpirations, but without pain. He has no remembrance of what took place during the accident. This loſs of memory is not obſerved in the following caſes:

2d. The workman laughs, ſings, or emits modulated ſounds; ſpeaks incoherently, talks a great deal, and falls into a ſtate of aſphyxia.

3d. The workman finds himſelf ſtruck; retires, attempts to ſpeak, is ſuddenly ſeized with convulſive

convulſive motions; dances about as if frantic, and falls down without any appearance of life.

4th. Pain in the ſtomach and in the joints of the arms; ſudden ſuffocation.

5th. Alternate and frequent elevation and depreſſion of the abdomen, with convulſion of the jaw.

Sometimes the affection is ſlight; reſpiration is only confined, and is not reſtored till after violent and convulſive efforts.

It ſometimes happens that in emptying the ſame privy or ſewer, two workmen are attacked in a different manner, or that one only is affected in two ways ſucceſſively. Theſe varieties depend as much perhaps on the diſpoſition of the individuals, as on the different natures of the miaſmata. It however appears that theſe diſtinct kinds of miaſmata are not obſerved but when the ſolid matters have been touched, and they ſeem to proceed, in a ſpecial manner, from ſome particular points.

In communicated aſphyxia we have ſeen the moſt violent ſpaſms, tetanic and even epileptic, and ſoon after all the ſigns of apparent death; loſs of the ſenſes, ceſſation of reſpiration and of the pulſe, abſolute inſenſibility, and ſpeedy coldneſs of the limbs. When the ſigns of life re-appear, a return of the ſpaſmodic ſymptoms is ſometimes obſerved, and the cure is leſs ſpeedy than in the caſe of primitive aſphyxiæ*.

* C. Halle never ſaw but one caſe of communicated aſphyxia.

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The acceſſions vary a great deal in their duration, and continue ſometimes an hour or an hour and a half. The fifth form, in general, is the longeſt. In all caſes reſuſcitation is not to be expected until air begins to iſſue from the mouth and the anus, and the individuals to make ſtrong inſpirations. A gradual re eſtabliſhment of the functions of the ſenſes is then obſerved, with a ſenſation of fatigue, a progreſſive diminution of the pains, ſometimes a ſwelling of the abdomen, bloody foam at the mouth; and if a vomiting take place, the cure in general is ſpeedily effected.

When a workman is thrown into a ſtate of aſphyxia, it is cuſtomary among thoſe who clean privies, &c. to employ at firſt the uſual ſtimulants; and when he recovers a little they make him ſwallow in ſucceſſion ſeveral ſpoonfuls of olive oil, until the ſtomach begins to ſwell: they then give him a glaſs of brandy; after which vomiting and evacuation by ſtool come on, and complete the cure.

The nature of the miaſmata which produce theſe accidents is entirely unknown. They announce themſelves by no conſtant odour; and they neither extinguiſh a candle nor inflame when brought into contact with a burning body.

The aſphyxiæ which are ſometimes ſuddenly produced by diſſecting certain dead bodies; the accidents which take place either on opening antient

tient tombs, or in going down into them; and thoſe which happened to the workmen employed in cleaning the ſewer of the Faubourg St. Antoine, and at the bottom of ſome wells, ought no doubt to be aſcribed to ſimilar cauſes; and ſometimes alſo perhaps to the preſence of non-reſpirable air.

131. All aſphyxiæ reſemble each other in their general characters. It is always on the organ of reſpiration that the different cauſes produce their firſt impreſſion, either by ſuſpending the introduction of atmoſpheric air into the bronchiæ, or by admitting a gas which cannot maintain life; or, in the laſt place, by conveying thither mephitic and poiſonous air. It is alſo on the ſame organ, and on the brain, that the ſecondary impreſſion exerciſes its action; whether the blood, deprived of the qualities which it ought to receive during the reſpiration of atmoſpheric air, becomes incapable of producing on that organ a conſtant excitement, neceſſary for the maintenance of life; or whether the ſtupefying action of the deleterious gas, exerciſed directly on the pulmonary nerves, and tranſmitted to the brain, ſuſpends the action of that organ. The phænomena thence reſulting always indicate a great derangement in the nervous functions: there are firſt obſerved ſpaſms, convulſions, a diminution and ſoon an abſolute loſs of ſenſation and voluntary motion; the movement of the thorax

ceaſes, and the pulſe is annihilated. In every thing elſe, except the heat, which is diſſipated ſlowly, the individual exhibits the moſt perfect picture of death. The greater part of the ſurfaces aſſume a colour more or leſs livid; the face, tongue, lips, &c. aſſume very often an extraordinary ſize, in conſequence of the accumulation of the blood, ſtopped towards the arterial extremities.

The ſuddenneſs of the aſphyxia varies alſo in each particular caſe, according to the ſtate of the individual; according as the lungs are empty or full of atmoſpheric air; and according as reſpiration is entirely intercepted, or as it can be performed at certain intervals, &c.

In every aſphyxia death becomes inevitable when the functions of the heart and lungs are entirely interrupted, and theſe functions rarely return ſpontaneouſly. In general, the lapſe of a few hours is ſufficient to render all medical aſſiſtance uſeleſs. However, as we have inſtances of reſuſcitation after a longer period, it is proper that the means applied ſhould be continued for a conſiderable time. Except a few particular means, indicated by complications, the ſame ſtimulants are proper in all caſes.

In regard to perſons who have died by aſphyxia, whatever may have been the cauſe, it is obſerved, in general, that the body paſſes ſpeedier to a ſtate of

of putrefaction; that the muſcles are leſs excitable by the action of the ſcalpel, and the nerves by that of the Galvanic fluid, according as death has been more painful and tedious.

On the other hand, when the aſphyxia has been inſtantaneous and the death ſudden, the body does not putrefy ſo ſoon; and the parts are more ſenſible to mechanical agents, and to the effects of Galvaniſm. It appears that the nervous fluid, which in the firſt caſe has been entirely waſted during the convulſions and long efforts of the vital re-action, has not time, in the ſecond, to be conſumed, as the action of life has been ſuddenly interrupted.

In the laſt place, the accumulation of the blood in the pulmonary veſſels, in the left cavities of the heart, and in the large veins, appears to be more ſtriking, as the aſphyxia has been more ſudden. (See *Xavier Bichat.*)

It is remarked alſo that the return to life, in caſes of aſphyxia, is the ſpeedier, cæteris paribus, the more ſuddenly the diſeaſe has come on.

132. There is one affection which conſiſts in a ſudden privation of the functions of the ſenſes and of voluntary motion, with a permanency in the attitude in which the perſon is, or which he has been made to aſſume.

This diſeaſe is very rare. We have only a ſmall number

number of hiſtories of it, the greater part of which have not yet been properly detailed.

Two inſtances are to be found in the *Ephemerides Curioſ. Nat.* The firſt produced by contradiction in a female child five years of age, of an obſtinate diſpoſition. The ſecond, in a magiſtrate, incenſed at having been inſulted in the diſcharge of his duty. We are told by Tulpius of a young man, paſſionately in love, who was inſtantaneouſly reduced to this ſtate, on having unexpectedly learned that oppoſition was made to his being married. Rondelet mentions a young woman, married againſt her will, who fell into this ſtate through the effect of grief; and the paroxyſms were always renewed when ſhe thought of her huſband; when ſhe heard his name mentioned, or when ſhe found herſelf unexpectedly near him. Fernet relates the caſe of a man of letters, who was attacked by this affection in the midſt of his labours; and Henricus Ab Heers deſcribes the ſingular attitude of a capuchin, whom he beheld with aſtoniſhment in a ſimilar ſtate.

In theſe different hiſtories there is always obſerved a privation of the functions of the ſenſes, and of voluntary motion; a permanency of the trunk and limbs in the attitude they had before the attack, with a ſuſceptibility of aſſuming and retaining all thoſe which may be given to them. Sometimes there is an almoſt abſolute ſuſpenſion of

of reſpiration, and even of pulſation, which at other times are almoſt completely maintained. Sometimes alſo the patient, pale and cold, exhibits the appearance of a ſtatue which walks when puſhed, and which ſometimes ſwallows when food is put into its mouth.

At the end of a period exceedingly variable, and which ſometimes may be longer than a day, according to ſome obſervations, there comes on a gradual re-eſtabliſhment of all the functions, often with yawning, borborygmus, profound ſighs, a ſenſation of laſſitude; and, in general, without any remembrance of what has paſſed.

The ecſtatic raptures of thoſe contemplative devotees, which, as we learn from hiſtory, occur in all religions, ought to be aſcribed to the ſame malady. In the hiſtory of St. Thereſa, in particular, written by herſelf, we may ſee the different degrees of myſtic ecſtaſy which the character of this diſeaſe at length aſſumes: a ſuſpenſion of reſpiration, of ſpeech, and of the intellectual faculties; the eyes involuntarily ſhut, immobility of the limbs, body remaining in one poſture half-bent forwards, and a complete appearance of death. The moral faculties however are exalted, and at the end of about half an hour motion returns, but accompanied with languor and fatigue.

A very great analogy is obſerved between the raptures

raptures of St. Thereſa and the pleaſure enjoyed by two young women who remained a long time in a fort of ecſtaſy during an acute diſeaſe. In many caſes of ſyncope, a ſimilar rapture is experienced; as was the caſe with Montaigne, who remained ſome time without motion in conſequence of a fall.

This diſeaſe ſeems to be produced, in general, by moral cauſes, which have a ſtronger and readier action on perſons whoſe nervous ſyſtem is highly irritable. It is produced by violent contradiction; by a high ſenſe of indignation, ſudden and invincible oppoſition to the gratification of ſtrong deſires; by a lively emotion which ſeizes on all the faculties; ſtrong mental exertion; long habit of contemplation, with continued and repeated efforts of the imagination; by the tranſports of an ardent mind wholly occupied with myſtic meditations. Foreſtus gives the hiſtory of many affections of this kind aſcribed to cold; but, as he only tells us that the ſoldiers were found dead in the morning, we have reaſon to doubt that the malady began by their falling into an analogous ſtate. It is however certain that very ſtrong deſire and continued ſtudy may bring on a ſtate of abſolute inſenſibility, approaching very near to this diſeaſe; and Rondelet diſcovered the fraud of a prieſt, who pretended to be ſeized with it, only by the care which he one day ſaw him take that he might not

hurt his head in falling. This ſingular ſtate has been diſtinguiſhed by the name of *Catalepſia*.

133. There is one diſeaſe with which ſome perſons are ſuddenly ſtruck, as if by lightning, ſo that they die after a few convulſions; but which in others is eſtabliſhed ſlowly and by degrees. The latter, in ſuch caſes, experience a ſort of inactivity and drowſineſs, then a palſy at firſt partial and afterwards more general; the ſenſes become torpid, the memory grows weak, and is loſt: at length, after ſeveral variations in the number and ſeverity of the ſymptoms, there comes on a ſudden ceſſation of motion, of ſenſation, and of the intellectual functions.

This diſeaſe, under certain circumſtances, is found to be almoſt epidemic; and in certain places* to be almoſt endemial. Medical writers have

* In the *Ephemerides Curioſ. Naturæ* an account is given of a ſomniferous conſtitution, which took place after the commencement of a moderately cold winter, with continual rain, violent ſouth winds, and frequent ſtorms. Houlier obſerved many caſes of apoplexy during a cold atmoſpheric conſtitution with ſouth winds. After a ſimilar conſtitution, Foreſtier ſaw a great many perſons fall a ſacrifice to apoplexy or convulſions. Morgagni relates that after the long prevalence of a cold damp temperature, ſuddenly followed by violent heats about the month of May 1729, a great many inſtances of ſudden death occurred. Apoplexy was very frequent in Italy during the years 1694 and 1695. Baglivi aſcribes this circumſtance to an uncommon

have obſerved that this ſoporific conſtitution always takes place during cold rainy weather.

This affection is obſerved chiefly among perſons deſcended from parents who have died of it. It attacks thoſe advanced in years, of a plethoric corpulent habit, who have a large head and a thick ſhort neck, who lead a ſedentary life and take little exerciſe; thoſe who have applied long and with too great aſſiduity to ſtudy; who are ſubject to frequent tranſports of paſſion, or who are expoſed to grief, and conſtant or frequently renewed uneaſineſs. On the one hand, all thoſe who enjoy in profuſion the pleaſures of a ſumptuous table and all the conveniences of life, and who do not make a ſuitable uſe of their bodily powers; and on the other, indigent perſons, who exhauſted by exceſſive labour can with difficulty procure the means of maintaining a miſerable exiſtence; and among the latter, thoſe who uſe to exceſs ſpiritous liquors.

This diſeaſe, in general, announces itſelf, even a long time before, by a ſeries of phænomena more or leſs permanent or tranſitory: ſuch as pains in the head, vertigo, ſinging in the ears, the appearance of lights and images floating before the eyes, tranſient dimneſs of ſight, tendency to ſleep, numbneſs of the limbs, with a ſenſation of prick-

conſtitution of the atmoſphere, to the miſery and calamities inſeparable from a war of ſeven years, and to the general terror occaſioned by frequent earthquakes.

ing,

ing, ſubſultus tendinum, partial and tranſient palſy, repeated faltering of the voice, habitual torpor of the ſenſes and thoughts, vacillation of memory, &c.

With theſe diſpoſitions the acceſſion is often produced by ſome appreciable cauſe: ſuch as the ſudden impreſſion of intenſe cold or violent heat, expoſure of the head to the ſcorching ardor of the ſun, violent efforts, exceſs at table, a violent moral affection, a tranſport of paſſion, ſudden fear or terror, exceſſive joy, incoercible laughter, violent percuſſion on the head, and ſometimes no apparent cauſe.

The diſeaſe may exhibit three principal degrees of intenſity.

In the firſt it is ſlight or imperfect; attacks only the ſenſibility of certain parts, the contractility of certain muſcles, which it reduces to a greater or leſs ſtate of torpor, but from which it is always poſſible to free the patient inſtantaneouſly. In this ſtate, there is obſerved ſometimes a ſimultaneous diminution and loſs of ſenſation, or an alteration of voluntary motion, while ſenſation remains unimpaired. Sometimes the affection is confined to a ſmall number of parts, or it extends over one ſide of the body. Sometimes there is a convulſion in the muſcles which have not been palſied. If the patient be rouſed from his drowſineſs by any ſudden or abrupt queſtion, he can ſpeak, and move

ſome of his limbs; but theſe intervals are ſhort, and he ſoon falls again into his former condition.

After a certain period, an abundant and univerſal ſweat, which affords relief, ſometimes comes on; a copious excretion of thick urine, a hæmorrhoïdal flux, evacuations by ſtool, vomiting, &c.; and theſe natural movements, when they exhibit the characters of critical evacuations, are ſigns of a favourable termination. The author of the book *De Morbis**, and Aretæus, conſider the cure as certain when the fever declares itſelf before the ſeventh day; and the former conſiders the diſeaſe mortal if it paſſes that period without fever. In a word, it commonly follows the remittent type; for the moſt part exhibits characters of pernicious fevers; and it is in its violent paroxyſms that its ſalutary or fatal termination is effected. The ſlighteſt apoplexy, for the moſt part, is attended with dangerous conſequences, and almoſt always paves the way for ſubſequent attacks, which at length become fatal. Sometimes even it proceeds in the ſame paroxyſm to the degree of violent or complete apoplexy.

In the ſecond degree, there is a loſs of voluntary motion, of ſenſation, and of the intellectual functions, with an inſuperable drowſineſs: the fever is rarely uſeful, and the danger neceſſarily increaſes in the ratio of the number of the follow-

* Aſcribed to Hippocrates.

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ing ſymptoms: weakneſs or even palſy of ſome of the interior organs; impoſſibility of deglutition; conſtipation, or frequent ſtools of a bad nature; ſwelling of the abdomen; incontinency or retention of urine, from which ſometimes ariſes gangrene in the bladder, in the organs of generation, and in different parts, but particularly in thoſe on which the body ſpecially reſts; ſonorous and loud reſpiration, with foam at the mouth; coldneſs, with ſweat in the upper extremities. Old age, a weak or worn out conſtitution, the great number and long continuance of the previous ſymptoms, are all cauſes which aggravate the malady, and render it more fatal.

In this caſe, the patient rarely eſcapes death; and if he does, he ſtill more rarely recovers that ſtate of health which he before enjoyed. A palſy, more or leſs complete, always remains for the moſt part in one of the ſides, and ſometimes in all the lower extremities; a læſion of ſome of the faculties, or a complete abolition of the function of the intellectual organ, with a ſort of imbecility*. At length, if the patient ſurvives, he drags out a miſerable exiſtence, which is gradually deſtroyed; or he falls a ſacrifice to the firſt paroxyſm, which will infallibly take place ſooner or later.

This diſeaſe, when carried to its utmoſt de-

* The inſtance of Malpighi related by Baglivi.

gree of intenſity, kills in a moment, like a ſtroke of lightning.

On opening the bodies derangements have often been found in ſome parts of the brain*; but theſe derangements are far from being conſtant in this malady, and are often found on opening the bodies of perſons who have died in a different manner. Beſides, organic derangements of the brain, which come on ſlowly, cannot be the cauſe of an affection ſo terrible and ſo ſudden. Very often, no alteration whatever is obſerved in the encephalic organ; ſo that, when a few marks of læſion are found in the brain, it cannot be aſſerted that they were the cauſe or even the effect of the diſeaſe and of death.

The rupture of ſome blood-veſſel has generally been conſidered as the cauſe of this malady, and the treatment has been directed by this ſuppoſition; but extravaſated blood is ſeldom found in the brain, and, when this is the caſe, the moſt dangerous accidents of the diſeaſe cannot be aſcribed to it. Morgagni gives an account of the phænomena obſerved on opening various bodies; and from

* Turgidity of the blood-veſſels, effuſion of blood or ſerous matter under the dura and pia mater, in the anfractuoſities, in the ventricles, in the cavities formed by the laceration of the brain; phlogoſis, thickening and ſuppuration of the membranes; ulcerations; purulent and often ſanious congeſtions in the encephalic organ; oſſeous tumours, depreſſions of the cranium with or without fracture, &c.

theſe

theſe hiſtories it appears probable that a matter diſcharged in the interior of the brain has been abſorbed. Some facts prove that a purulent collection, the exiſtence of which could not be ſuſpected, and which produced no comatoſe ſymptom, had made a paſſage for itſelf outwards, by an exfoliation of the whole thickneſs of the cranium.

After the operation of trepanning, individuals have died, though a paſſage was made for the blood to eſcape. Others have been cured without any blood being found; and at preſent, when trepanning is leſs employed than formerly, it is not obſerved that more perſons die in conſequence of wounds in the head.

Comatoſe affections, which come on after violent blows on the cranium, do not ſeem to depend eſſentially on fractures, and on collections of extravaſated blood which may be formed; but much rather on the commotion, agitation, and greater or leſs preſſure which have taken place, and which ſometimes are ſuch that the brain ſeems to have experienced a ſort of partial death. On opening the cranium, indeed, when the patient has ſurvived ſeveral days, it is found in part decompoſed and without conſiſtence in the place which had ſuffered moſt.

Morgagni relates ſeveral caſes of this kind where the brain was found flabby, ſoft, and ſometimes in a ſort of putrid ſtate.

This malady ſeems to ariſe from a great diminu-

tion and ſometimes a complete deſtruction of the action of the brain. In the hiſtory which ſome original obſervers give of it, it is ſeen that it appears ſometimes to be ſubject to the general influence of climate, of ſeaſons, of the morbific conſtitution of the atmoſphere, and particularly of thoſe cauſes which, for the moſt part, produce continued pernicious fevers, and all affections connected with nervous debility. It is owing to moral affections which depreſs the nervous action; to the too frequent uſe of exhauſting excitement; to the withdrawing of ſtimulants neceſſary for maintaining it: in the laſt place, it is the diſeaſe of old age, a period when vital action is generally very much diminiſhed.

There can be no doubt that the brain is the eſſential ſeat of this diſeaſe; but it is very often in the abdominal region that it diſplays the previous ſymptoms of its attack*. Hence, there are obſerved a long time before: loſs of appetite, loathing, frequent indigeſtion, flatulencies, &c. irregularity in the inteſtinal action, dull and long continued pains in the abdomen, vomiting. Though Morgagni ſeems to dwell with a ſtriking predilection on the ſlighteſt alterations which he found in the inſide of the cranium, his work contains hiſtories in which he has deſcribed the moſt remarkable derangements in the thorax and abdomen, ſuch as læſions of the heart,

* It would appear that, in this caſe, the weakneſs of the brain begins to manifeſt itſelf on the organs of digeſtion.

pericardium,

pericardium, liver and pancreas; evident traces of chronic phlegmaſiæ in the inteſtines, the bladder, &c.; calculi found either in the bladder or in the kidneys: all facts, which, on the firſt view, do not ſeem to preſent ſo intimate a relation with the diſeaſe as extravaſations, turgidity of the veſſels, and oſſeous tumours found in the cranium; but which indicate that the diſeaſe, inſtead of being a ſimple affection, ariſes rather from a very complex derangement; that it is the combined reſult of a multitude of diſeaſes, which, if I may uſe the expreſſion, have been a long time brooding, which are gradually formed and in ſilence, to burſt forth afterwards at once, and to attack life in its moſt intimate receſſes.

In this diſeaſe, the ſtate of the pulſe does not exhibit a character ſufficiently conſtant to enable us always to deduce from it a certain induction. In general it retains fullneſs, and even hardneſs and a great deal of ſtrength, till a ſhort time before death. It is to be obſerved that phyſicians have remarked almoſt the ſame ſtrength of the pulſe in that kind of apoplexy which they aſcribe to collections of ſerous matter in the brain, and in that which they ſuppoſe to be owing to a collection of extravaſated blood.

It is of importance that this diſeaſe ſhould be diſtinguiſhed, according to its principal cauſes, into ſeveral kinds.

1ſt. One appears to be produced, in a ſpecial manner, by an active determination of the blood towards the head, and a hæmorrhagic rupture; it is characterized by the age, the habitual conſtitution of the individual, and circumſtances proper for maintaining and producing a plethoric ſtate. Its attack, according to Stahl, is preceded by violent and heavy pains in the head, vibration of the carotid veins, intumeſcence of all the veſſels of the head, ſwelling and intenſe redneſs of the face and neck; at the ſame time paleneſs, conſtriction and coldneſs of the lower extremities.

2d. Another ſeems to ariſe from a weakneſs or debility of the cerebral organ. It is peculiar to old perſons, and thoſe exhauſted by exceſſes of every kind; by long want of the neceſſaries of life, by ſtrong mental affections; and, in the laſt place, by a natural diminution of vitality in old age. It is this kind in particular which is preceded by ſlow and gradual ſymptoms, and which is gradually formed, though its attack is often very ſudden.

Theſe two types, very diſtinct from each other, are only a reſult of abſtraction, and form in ſome meaſure the two ends of a chain, all the intermediate links of which may repreſent ſo many individual caſes, more or leſs approaching each other. This is all that art can do: it marks out the extremes, that it may employ them as points of compariſon.

3d.

3d. A third kind is produced by a ſudden commotion, after a blow, an electric ſhock, or a ſtroke of lightning. It makes its attack, without diſtinction, in all circumſtances of age or conſtitution, and without any kind of prediſpoſition.

Remedies more varied and violent have been employed in this diſeaſe, as it is in general more fatal. They, however, all conſiſt in bleeding, and ſtimulants of greater or leſs ſtrength.

Bleeding ſeems to be indicated only for the purpoſe of ſpeedily ſuſpending thoſe accidents which may reſult from an afflux of blood towards the head: it appears in ſuch caſes to be of great benefit, and ought to be copious: but it is hardly poſſible to conceive how bleeding can be uſeful when there is a collection in the brain. If any collection be formed, the only thing to be wiſhed for is that reſorption may take place; and it is not by diminiſhing the ſtrength that this can be promoted. Thus, even when it is neceſſary to bleed copiouſly, to ſuſpend the determination of blood towards the head, which may occaſion ſpeedy death; to have been obliged to employ debilitating means ſoon becomes hurtful, in regard to the conſecutive accidents which may ariſe from weakening the brain; and it would be uſeful, after the firſt accidents have been removed by bleeding, to be able to reſtore the blood which has been taken from the body, and to give back even an exceſs of tone to the individual,

dual, that he may have power to reſiſt further accidents, which, in general, prove fatal.

Stimulants do not ſeem to be proper in the firſt kind of apoplexy; and in the ſecond they ought to be employed with great caution. When too ſtrong and too long continued, they exhauſt inſtead of exciting the vital forces. In general, active medicine has been attended with ſo little ſucceſs in the treatment of this diſeaſe, that it would be prudent to adhere to the ſmall number of means which ſeem rigorouſly neceſſary, and to be clearly indicated; and to prohibit altogether that chance application of very active means, which without doubt are often very prejudicial in *apoplexy*.

ASTHENIC

ASTHENIC AFFECTIONS.

134. The organs are ſuſceptible of experiencing different degrees of weakneſs, and in theſe caſes they exhibit a great variety of phænomena in the exerciſe of their functions.

Theſe phænomena are particularly remarkable in the muſcular ſyſtem.

Thus, in old men; perſons of a weak, ſoft, and relaxed conſtitution, indolent and ſedentary, who ſleep a great deal, and live in a luxurious manner; perſons exhauſted by late hours or exceſſive labours, abuſe of pleaſures, or by poverty, and in a word by all debilitating cauſes; in cold damp countries and ſeaſons; ſometimes after a great and ſudden derangement of ſome functions which have become habitual; after a violent moral affection, an attack of apoplexy, a blow on the head or the ſpine, &c.; ſometimes even among men in full vigour of life, palſy takes place in different parts of the muſcular ſyſtem.

Its attack is ſometimes ſudden and violent; at other times it announces itſelf ſlowly, by heavineſs, numbneſs, and a ſenſation of cold in the part which is threatened; motion is at firſt difficult, and then becomes impoſſible. The palſy gradually advances, or attacks very diſtant parts.

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In certain cafes, particularly after apoplexy, it affects more or lefs uniformly a whole fide, comprehending the trunk, the neck, the head, and even the odd or central parts, fuch as the nofe, the mouth, the tongue, the uvula, the pharynx, and perhaps even the whole feries of the digeftive canal; fometimes the fide not palfied is affected with convulfive movements. If the difeafe continue a long time, the intellectal faculties become weak; and another attack of apoplexy puts an end to the patient's exiftence.

In other cafes, the palfy confines itfelf to the pelvian limbs, and to the organs contained in the abdomen, below the navel. The urine and ftools then flow involuntarily; a fwelling of the limbs takes place, flow fever, fometimes gangrene, and at length death.

After thefe two principal forms, nothing is obferved but inconftancy and great variety. Thus the palfied eye-lids cover the ball of the eye; palfy of the tongue produces lofs of fpeech; that of the larynx aphonia; deglutition is prevented by that of the pharynx and of the œfophagus.

A diftinct palfy may take place in every part furnifhed with mufcular apparatus, fuch as the fphincter ani, that of the bladder, the penis, a foot, a hand, a finger. It may attack feparately the extenfor or flexor mufcles of one part, and even a fingle mufcle in particular, as in the torticollis. *(Obftipité.)*

Mufcu'ar

Muſcular weakneſs, incoercible tremor, complete abolition of voluntary motion and ſenſation, are the different degrees of intenſity of this diſeaſe.

A palſied limb may exhibit varied ſymptoms, according to the nerves particularly affected, and to the intenſity of the affection. If it be recollected that a limb is furniſhed, 1ſt, with nerves which are diſtributed to the muſcles; 2d, with thoſe which creep along the ſkin; 3d, with thoſe which accompany the veſſels; the different degrees of alteration which theſe organs muſt experience will excite very little aſtoniſhment.

The muſcles are the firſt parts which exhibit ſigns of palſy; then the ſkin, which ſometimes loſes the ſenſe of feeling: at laſt, the nervous action of the vaſcular ſyſtem begins to be weakened.

When a limb is palſied, it is obſerved that its warmth decreaſes; it becomes waſted, and at length loſes all ſenſation and the power of motion.

When the palſy is characterized by the loſs of motion and ſenſation, and if it continues a long time, it is often obſerved that the muſcles, tendons, aponeuroſes, and cellular tiſſue, ſkin, &c. loſe their organic ſtructure, and are transformed, more or leſs completely, into a homogeneous ſubſtance of a ligamentous, membranous, or pulpy nature. This phænomenon is very analogous to that of the *converſion into fat*, or transformation into adipocera, obſerved in ſome burying-grounds ſaturated

ſaturated with dead bodies*. The chemical force of affinity, modified and checked by a remnant of vital action, which the limb ſtill retains, ſeems to be the cauſe of this converſion.

When the palſy of a limb is characterized not only by the loſs of ſenſation and motion, but by weakneſs of nervous action in the vaſcular ſyſtem of all its parts, there is a period when the vital force, which ſtill exiſts, is not ſufficiently ſtrong to counterbalance the chemical action, and then one of the two following phænomena takes place:

Sometimes a limb or the portion of a limb becomes cold, dries up, turns black without breaking, and thus waſtes ſlowly away. This accident produces an increaſe of action in the reſt of the part, and there is formed a reddiſh, painful circle, which bounds the mortification. This phænomenon is evidently analogous to that which takes place in a limb ſuſpended in the open air, and which experiences rather a ſort of deſiccation than real putrefaction. In order that this phænomenon may take place, it is eſſentially neceſſary that the epidermis ſhould remain untouched, and that it ſhould become dry, and ſecure the ſubjacent parts from the

* Chemiſts have found that this adipo-cerous ſubſtance is ammoniacal ſoap. They are of opinion that the azotic and hydrogen gas, diſengaged during putrefaction, by combining together form ammonia; and that this alkali unites to the fat to produce ſoap. The reſult of the transformation which takes place in the limbs of ſome paralytic perſons has not yet been analyſed.

contact

contact of the air. Without these conditions another phænomenon takes place.

In the latter case, as in the preceding, when the vital force is so far diminished that it is incapable of counterbalancing with advantage the force of affinity, the external parts, and, in particular, those which support the body, or which are in mutual contact, exhibit vibices or eschars of greater or less depth: the vital action is then exalted around these mortifications; a small degree of pain takes place, a reddish circle is formed, and the dropping off of the eschar leaves a solution of continuity. If the vital power continues to become weaker, that of affinity gains in proportion; and in this state of things the action of the oxygen of the air on the part deprived of epidermis, the moisture of the limb, and the little heat it retains, produce a phænomenon similar to that of putrefaction, and which is checked or modified only by a remnant of vital power.

But between the state of deiccation of the limb, to which the name of dry gangrene has been given, and that of modified putrefaction, called humid gangrene, there are a great many intermediate shades of a state, of which we here exhibit only the two extremes. A complete mortification of any part is called *sphacelus*.

On opening the bodies of persons who have died of the palsy, traces of alteration are sometimes found in the brain, or along its vertebral prolonga-

tion: ſuch as ſanguinolent or ſerous collections; tumours, abſceſſes, ulcers, &c. It is commonly towards the lumbar region that the cauſes of palſy of the pelvian limbs are found. Foreſtus ſaw palſy of the thoracic limbs take place after a blow with a ſtone on the cervical region.

This diſeaſe is always exceedingly dangerous, when it does not ariſe from an accidental cauſe: it then indicates a profound derangement in the nervous action, and the ſlighteſt acceſſion of palſy gives reaſon to apprehend a fatal return.

In this diſeaſe, the prognoſtic is the more fatal as the affection is more extenſive and intenſe. It is the more ſo when it attacks the interior organs; when it deſtroys ſenſation, and when there exiſts in the parts neither pain nor a ſenſation of pricking. It is more troubleſome at an advanced period of life; in autumn and in winter; in perſons exhauſted by a great concurrence of debilitating cauſes, &c. The palſy which ſucceeds metallic colics is not always fatal, except that of the lower parts, which almoſt invariably terminates in death.

A view of the circumſtances which give riſe to its development or attack is ſufficient to indicate the precautions capable of preventing, or the means proper for combating or retarding, the fatal effects of *muſcular palſy*.

135. There is one affection peculiar to the limbs,

limbs, which ſeems to ariſe from a weak and deranged ſtate of the nervous action, and which is partly real and partly voluntary. It affects chiefly young perſons, between the age of ten and fourteen, and for the moſt part before the period of puberty. It announces itſelf by convulſive motions in the foot and leg of one ſide; and, in general, of the left. When the patient attempts to walk, the leg ſeems to be half palſied, and drags on the ground; the arm alſo is ſubject to convulſive agitations of the ſame kind, eſpecially when the individual tries to move it in order to uſe it.

It appears that this diſeaſe ariſes only from want of power, in conſequence of convulſive ſhocks, to regulate with preciſion the motions of the limb. This inability ſeems to be owing to great weakneſs of nervous action in the muſcles; but it is alſo probable that theſe convulſive movements are maintained, or acquire more intenſity, becauſe the patient gives way to them.

This affection is propagated in a ſingular manner by imitation. It has been ſeen at Ulm, like a kind of epidemic diſorder, at the feſtival of St. Vitus, and in the Cevennes, at that of the Holy Virgin. *St. Vitus's dance.*

136. *Aſtheniæ of the organs of the ſenſes.* There are ſome perſons who, though their eyes are ap-

parently free from any blemiſh, ſee leſs diſtinctly than others. *(Amblyopia.)*

This affection may ariſe from two very different cauſes:

1ſt. A diminution of the ſenſibility of the retina.

2d. An exceſs of ſenſibility in the pupil.

This diſeaſe has been aſcribed alſo to a change of denſity in the humours of the eye, which it is impoſſible to obſerve.

When weakneſs of ſight is occaſioned by a diminution of ſenſibility in the retina, the pupil contracts with leſs force on receiving the impreſſion of light, and remains habitually more dilated.

The weakneſs of the retina is ſometimes ſo great, that the perſon cannot ſee diſtinctly but in the daytime; his ſight ceaſes entirely at ſun-ſet, notwithſtanding the influence of artificial light, or of that of the moon*. This affection, which conſiſts in being thus *deprived* of viſion during the night, is diſtinguiſhed by the name of *Nyctalopia*.

One affection of this kind is ſometimes epidemic, and even endemial, and ſhows itſelf in the ſpring. It exhibits ſome analogy with catarrhal affections, and is cured ſpontaneouſly.

In this diſeaſe, viſion is diſtinct as long as the

* According to Bouguer, the ſolar light is to that of a candle placed at the diſtance of 16 feet as 11,664 to 1, and to that of the moon as 374,000 to 1.

ſun

ſun is above the horizon, but decreaſes as he becomes lower; the eyes are obſcured by a ſort of cloud or ſmoke; the pupils dilate; ſometimes the eyes are exceedingly watery; the ſight is entirely extinguiſhed at ſun-ſet, and notwithſtanding the ſtrongeſt artificial light, or that of the moon, does not return till ſun-riſe.

Certain perſons ſee ſeveral objects at the ſame time, or the ſame object multiplied, and the ſight is confuſed. This affection may ariſe from the ſenſibility of the retina being weakened in the point ſtruck by the direct rays; ſo that the oblique rays produce on the other parts of it an impreſſion equally ſtrong, and the object is multiplied.

When weakneſs of ſight ariſes from an exceſs of ſenſibility in the pupil, the pupil contracts ſtrongly on receiving the impreſſion of a weak light, and remains habitually cloſer. In this caſe the contraction of the pupil does not allow it to receive a pencil of light ſufficiently ſtrong to produce viſion, eſpecially if the object be at a conſiderable diſtance.

The ſenſibility of the pupil is ſometimes ſo great that the eye cannot endure the light of the day *(Hemeralopia)*, and the perſon ſees beſt in the night-time*.

In

* This diſpoſition ſeems ſometimes to be the reſult of an opacity in the centre of the cryſtalline humour, which intercepts

In the caſe of too great ſenſibility of the iris, it is obſerved that the ſight is ſtrengthened by remaining a long time in the dark. It is lengthened by employing a ſimple tube, becauſe the lateral rays, the vivacity of which produces the exceſſive contraction of the pupil, or a plurality of images, are then excluded; and it is preſerved by plane glaſſes of a green colour, which ſuffer no rays to paſs but ſuch as are faint, and accompanied with a great deal of ſhade. In hot and ſandy countries they are indiſpenſably neceſſary.

It ſometimes happens, but chiefly to perſons who are long-ſighted, when they look at diſtant objects exceedingly luminous, in a very bright atmoſphere, or when the eye itſelf is immerſed in a very ſtrong light, that they perceive between the eye and the object, images which always correſpond at the ſame diſtance of the viſual axis, and diſappear when the object is very near. Theſe images are ſometimes ſeen through the eyelids when the day-light is very ſtrong, and diſappear in the dark.

Boerhaave aſcribes theſe images to a diminution or complete abolition of ſenſibility in certain parts of the retina.

Some perſons who are long-ſighted, when they

the paſſage of the rays of light in the day-time, by the contraction of the pupil, while its dilatation in a weaker light permits the rays to paſs towards the opake part of the cryſtalline humour.

look

look ſteadily at any object of one colour, or of a dazzling whiteneſs, and ſomewhat diſtant, particularly in the heavens, ſometimes ſee luminous bubbles continually floating up and down, &c. Boerhaave aſcribes this phænomenon to the preſence of ſmall, ſolid, tranſparent bodies floating in the aqueous humour.

In certain caſes of diſeaſe, ſome perſons, while aſleep or awake, ſee ſmall luminous ſpots or ſparks of fire. Theſe commonly appear alſo after ſome external violence, a blow on the head, ſtrong fit of ſneezing, &c.

137. The eyes ſometimes appear to be perfectly ſound in perſons totally blind. In this caſe theſe organs exhibit no animation; have often a ſquinting appearance, and the individuals ſhow a kind of ſtupidity in all their actions, and uncertainty in their motions. The pupils, for the moſt part dilated and ſometimes contracted, do not move on receiving the ſudden impreſſion of a ſtrong light; and the eye-lids do not wink on the ſudden approach of the fingers.

This affection takes place, in general, in a very ſlow and a gradual manner; ſometimes it comes on ſuddenly. The exiſtence of complete blindneſs may be known by ſeveral ſigns, which vary in their intenſity, from mere weakneſs of ſight to abſolute blindneſs; which, in this caſe, has been

diſtinguiſhed by the name of *amauroſis*. (*Gutta ſerena.*)

Sometimes, eſpecially in the commencement of the amauroſis, the iris continues to contract on being expoſed to a ſtrong light; this contraction ſeems to ariſe merely from the ſenſibility of the iris. In this caſe, the momentaneous contraction of the pupil is ſoon ſucceeded by a very great dilatation, which continues. This affection may be confounded with the brown or black cataract; but this caſe is very rare.

Amauroſis ariſes from a palſy of the retina, of the optic nerve, or of its layers in the brain. It almoſt always takes place gradually; it is, however, produced ſometimes inſtantaneouſly by cauſes of general palſy: ſuch as a violent blow on the head, læſion of the frontal ramus of the ophthalmic nerve, &c.

This diſeaſe is always exceedingly troubleſome, and affords very little hope of a cure.

It is difficult to ſay how far bleeding, emetics, purgatives, veſicatories, ſcarification, ſetons, electricity, &c. may be uſeful; all of which are certainly employed too readily and with too much confidence.

138. The ſenſe of hearing is ſuſceptible of being weakened, and even of being entirely deſtroyed. This diſeaſe may ariſe from a weakneſs or

or palſy of the acouſtic nerves. (*Dulneſs of hearing, deafneſs.*)

In the caſe of dulneſs of hearing through weakneſs of the organ, it may readily be conceived that it may be diminiſhed by the uſe of an ear-trumpet, which will convey into the ear a greater maſs of air in a ſtate of vibration. The organ of hearing is ſubject alſo to other peculiar and uncommon affections, the cauſe of which is unknown. Thus, a perſon ſometimes hears only in a confuſed manner words pronounced with a loud voice, and at the ſame time can diſtinguiſh weak ſounds. Sometimes a weak ſound produces on the organ a painful ſenſation; at other times a ſound cannot be underſtood but by the help of ſome loud concomitant noiſe; a double ſound is ſometimes heard, &c. The uſe of the different parts of which the ſyſtem of hearing is compoſed, has not yet been determined with ſufficient preciſion to enable us to account for all theſe anomalies.

139. The ſenſe of ſmelling is ſometimes weakened, or even entirely deſtroyed, by weakneſs or palſy of the pituitary membrane.

140. In man, the organ of generation is ſuſceptible of different affections which ariſe from a ſtate of weakneſs or ſpaſm.

Some men, who have a proper erection, and perform

form completely the act of coition, ejaculate too slowly, with difficulty, or not at all. Sometimes, though the sensation which accompanies ejaculation takes place, it is only at the end of a certain period, and with slowness, that the sperm begins to flow.

This infirmity arises from a weakness of the parts which concur to produce ejaculation *; from an excess of vigour and tension in the penis †, or from a derangement in the structure of these organs ‡. *Dyspermatismus.*

In some persons the penis is incapable of erection; there is also an abolition of desire for coition, or an impossibility of gratifying it. This affection may arise from a weakness in the nervous action of the whole system of generation. It is often the consequence of excess with women, or of masturbation; it comes on also sometimes in the moment of enjoyment, ardently pursued for a long time with a continued erection. It may afterwards be renewed by the force of imagination, every time that the fear of a similar accident oc-

* Instances of this kind of infirmity may be found in Amatus, Marcellus Donatus, Forestus, &c.

† Of this kind is the case of the Venetian to whom Cockburn recommended the use of debilitants.

‡ As a tumour or nodosity in the urethra; cicatrices before the aperture of the spermatic ducts; constriction of the canal. See *Mem. de l'Acad. de Chirurgerie.*

curs

curs to the memory during the act of coition*. *Impotency.*

141. Each part of the arterial ſyſtem reſiſts the continual pulſation of the blood, and retains its uſual diameter by the tonic force of its ſides. If this force happens to be diminiſhed in a part of an artery by any cauſe whatever, that part yields to the impulſe of the fluid; and if this firſt degree of weakneſs continues or increaſes, the artery experiences in the part a dilatation, which in the courſe of time generally increaſes.

When the affected artery is ſituated in the thickneſs of a limb, the progreſs of the tumour may be followed. It is at firſt ſmall, round, and without any change of colour in the ſkin. In general, it produces neither pain nor reſtraint in the motion of the limb; it exhibits pulſations perfectly iſochronous to thoſe of the pulſe, and which depend on its ſucceſſive and inſtantaneous development. Theſe pulſations decreaſe, or even ceaſe, when the artery is compreſſed above the tumour. On the other hand, if the artery be compreſſed below the tumour, they increaſe. The tumour, when

* The reader may ſee in Montaigne (on the imagination) an account of the myſterious practices which he employed to overcome the effect produced by vain threats on a too credulous mind. The reader will there alſo find the beſt means for defeating the *noueurs d'éguillettes.*

preſſed,

preſſed, ſubſides and diſappears with a certain noiſe, and re-appears as ſoon as the preſſure is removed.

The arterial tumour increaſes at firſt very ſlowly; but at a certain period it ſoon acquires a conſiderable ſize. It then becomes hard and renitent, and does not entirely diſappear by preſſure. Its pulſations are more faint, and in a little time nothing is perceived but a ſort of tremor. The limb exhibits a ſoft, flabby tumefaction; it becomes painful, and covered with diſtended veins. If the diſeaſe be left to itſelf, the part is at length affected with a gangrenous phlegmaſia; and when the eſchar drops, the patient dies of a hæmorrhagy.

Aneuriſm.

By the aperture of aneuriſmal tumours, at different periods, we learn that the artery, for the moſt part, dilates in an uniform manner in its whole circumference, and aſſumes the form of an olive. The tumour, when it becomes more voluminous, ſeems to have increaſed only towards thoſe parts which offered the leaſt reſiſtance; it adheres to the ſkin by a compact cellular tiſſue. The muſcles are often found thin, and the bones deformed or deſtroyed.

The aneuriſmal bag is lined with curds diſpoſed in ſtrata, the conſiſtence of which decreaſes inwardly from the outſide. If it be entirely emptied, it is found that the dilatation has been effected on one

one of the ſides of the artery, and that the ſides of the bag are formed only by the exterior tunic of the artery conſiderably thickened. The edges of the other two tunics are indeed ſtill obſerved to be fringed in an irregular manner by their burſting, when the artery acquired too ſudden and too great increaſe.

It is ſometimes difficult to diſtinguiſh an aneuriſmal tumour of a limb, eſpecially when the pulſations are ſcarcely felt through the conſiderable thickneſs which the bag acquires in the laſt ſtages of the diſeaſe. Beſides, any tumour ſituated on a large artery may be raiſed up by the beating of that veſſel, and thus exhibit pulſations capable of leading into a miſtake.

Aneuriſm of the heart is much more difficult to be diſtinguiſhed; the caſe is the ſame with that of the aorta, either where it paſſes through the thorax or the abdomen; and, in general, this malady is not characterized until it has made ſome progreſs. Aneuriſms of the breaſt, however, always produce derangements capable of attracting attention: ſuch as palpitation of the heart, at firſt ſlight and afterwards violent; difficulty of reſpiration, which is increaſed by exerciſe; agitated ſleep; more ſtriking uneaſineſs in certain poſitions, &c.; different alterations in the pulſe, which in general is hard, cloſe, intermittent, and always irregular.

The ſymptoms multiply and are aggravated as the tumour

tumour increaſes; the pulſations become ſenſible under the hand, and the part by the effort of repeated beats is deformed. The vertebræ, the ribs and the ſternum are bent or deſtroyed. Sometimes the pulſations are ſenſible to the ſight; they produce a general ſhock, and raiſe up the trunk at each beat of the tumour. The voice is more or leſs altered and hiſſing; and if the tumour compreſſes the trachea and the œſophagus, deglutition is difficult.

All theſe phænomena may exhibit tranſient moments of remiſſion; but afterwards the cheeks become injected, the lips projecting, and of a violet colour; the limbs cold, and ſometimes œdematous; the breaſt ceaſes to produce the ſame ſound by percuſſion; fits of ſuffocation are frequent, and almoſt continual; and the patient at length falls a ſacrifice to them, if not carried off before by a hæmorrhagy reſulting from the rupture of the aneuriſmal bag.

Aneuriſms of the abdomen exhibit only a part of the preceding phænomena; but they can be much more eaſily diſtinguiſhed by the touch; and Deſault aſſerts that the character of the aneuriſmatic pulſe is always found in the crural artery.

Aneuriſms take place more readily in the heart, the aorta, and the large arteries, where the impulſe of the blood is ſtronger, and where the ſides oppoſe leſs reſiſtance than thoſe of the ſmall arteries.

The

The cauſes which produce aneuriſms are very obſcure. Theſe affections, in general, are aſcribed to violent and continued muſcular efforts, melancholy moral affections long continued, &c. In ſome caſes, the diſeaſe is not only local, but ſeems to extend to ſeveral parts of the arterial ſyſtem, and there then exiſts a ſort of aneuriſmatic diatheſis. Others beſides Dehaën have found in the ſame body a great number of aneuriſmal dilatations.

This affection, when it attains to a certain degree, becomes incurable, and the fatal effects of it can be avoided only by complete obliteration of the dilated artery, when a ligature can be formed on it, and when the collateral arteries are able to diſcharge the functions of that which has been ſuppreſſed; ſo that the operation of aneuriſm, though painful, is always the ſureſt method of cure.

Several inſtances of cure by the repeated uſe of bleeding, of acid beverages, and of ſevere regimen long continued, are quoted on the authority of Vaſalva. Theſe means, though very uncertain, are the only ones which can be employed for aneuriſms of the heart, or of the arteries contained in the large cavities.

142. When an artery has been opened by any inſtrument, the blood diſcharged is accumulated in the ſurrounding cellular tiſſue, and produces a tumour,

mour, which increaſes the faſter the more eaſily the cellular tiſſue yields. This tumour is not circumſcribed, but exhibits an irregular form, unequal, and as if indented. Its volume decreaſes very little by preſſure, and it does not exhibit very manifeſt pulſations, but a ſort of quivering. The ſkin aſſumes a yellow violet colour. The parts diſtended beyond meaſure by the accumulated blood, become gangrened, and the patient is ſoon carried off by a hæmorrhagy. In this caſe, the artery always occupies the baſe of the tumour; it retains its uſual diameter, and exhibits a circular or elliptical aperture.

Obliteration of this artery is ſtill the only means of ſecuring the patient from the fatal conſequences of this diſeaſe, which is called *a falſe aneuriſm.*

143. It happens, in ſome very rare caſes, that the artery has been opened by an inſtrument which paſſed through a vein placed directly above it. When the hæmorrhagy has been ſtopped, the blood continues to paſs from the artery into the vein, and the latter becomes dilated. *Varicoſe aneuriſm.*

144. The veins are alſo ſubject to dilatations, obſerved for the moſt part in the legs, ſometimes in the thighs, and even on the integuments of the abdomen. Theſe dilatations may take place in every

every part of the body, and hæmorrhoidal tumours are nothing primitively but dilated veins. *Varices.*

Varicoſe veins, which in general are ſuperficial, have a ſerpentine form; are interſperſed with knots, and always have a blueiſh appearance. They are more apparent after walking or long ſtanding, and when the limb is compreſſed by a ligature placed above the part. On the other hand, they decreaſe or totally diſappear by reſt in a horizontal poſition, and by moderate and uniform compreſſion.

At firſt, varices are always formed by a ſimple dilatation of the veins; they are ſoft, and ſink down on the leaſt preſſure: but in the courſe of time they exhibit great renitency, yield only ſlowly when compreſſed, and ſometimes become hard and as it were ſcirrhous. In this caſe it appears that the ſurrounding tiſſue has been thickened by a ſort of chronic phlegmaſia.

Recent varices, when ſmall and few in number, are ſcarcely worthy of attention; but in the courſe of time they multiply, become painful, and on burſting give riſe to repeated hæmorrhagies. Sometimes they produce incurable chronic ulcers.

Varicoſe tumours are obſerved chiefly among perſons who by their ſituation are obliged to remain ſtanding in low, damp places, or to carry ſlowly very heavy burthens; among pregnant women; individuals whoſe hypochondrium is the ſeat of ſome chronic affections; and among thoſe

who have long been afflicted with ſome malady in the legs, &c. They take place only in the ſuperficial veins, which are little ſupported by the neighbouring parts. The progreſs of their dilatation may be checked by conſtant, gentle, and uniform preſſure: for the legs, a bandage or ſtocking made of ſtrong leather or cloth will anſwer the purpoſe.

145. Serous fluids ſecreted by the ſero-fibrous ſurfaces of our organs may not be aſſimilated, digeſted, and properly taken up by the parts which contain them. The quantity of fluid abſorbed may not be proportioned to that produced; becauſe the ſecretion is more active, or becauſe abſorption has been checked. In this caſe, the ſerous matter accumulates, and produces a ſeries of affections of the ſame order, but which exhibit phænomena very much varied according to the parts where they are found.

DROPSIES.

146. One is peculiar to children, who often bring it with them at their birth. It has its ſeat in the cranium. This cavity acquires a volume more or leſs extraordinary, which forms a ſingular contraſt with the uſual dimenſions of the face and with thoſe of the trunk and the limbs, which increaſe very little, and particularly the thoracic limbs. The cranium acquires a ſort of tranſparency, more remarkable towards the fontanellæ,

and

and the ſutures are often ſeparated. The forehead is conſiderably extended, and the orbits are depreſſed; the eyes project, turning outwards and downwards, and are half covered by the lower eye-lids.

The child is generally ſtupid, melancholy and drowſy. Sometimes vertigo and convulſions come on; it is affected by ſounds if any way loud, and by all rude movements. The inferior limbs become palſied, and the vertebral column is bent, &c.

This diſeaſe is ſometimes produced by a blow on the head; but, in general, the cauſes which give riſe to it are unknown. When the ſutures are ſeparated, the patient ſeldom lives more than three or four years; if the intervals between the bones become filled up, it is by the development of ſupernumerary bones; and the child may then live longer, but it rarely attains to the age of puberty.

On opening the body, the cranium is found to be filled with ſerous matter. The brain diſtended is ſometimes ſo thin as to have the appearance of a very fine membrane; which has induced ſome to imagine that it is entirely wanting. The ſeat as well as the quantity of the matter collected is ſubject to great variation: this fluid is found between the cranium and the dura mater, between the latter and the pia mater, and between theſe membranes and the brain; but for the moſt part it appears to have begun in the ventricles.

We are taught by obſervation, that by giving vent to the ſerous matter immediate death is occaſioned. Pretty ſtrong compreſſion on the cranium is alſo fatal; and the advantages ſaid to be derived from ſalivation are not ſufficiently proved.

In this diſeaſe, the cranium ſometimes is ſcarcely deformed; but a ſoft and ſemi-tranſparent tumour, which has a communication with its cavity, is obſerved on a certain point of its circumference, and particularly towards the occiput. *Hydrocephalum.*

147. A ſoft and tranſparent tumour is obſerved alſo among children, on one or more regions of the vertebral column, accompanied, for the moſt part, with palſy of the inferior limbs, and in the ſphincters of the bladder and of the rectum. The cranium often appears to be more expanded; the fontanellæ, and particularly the anterior one, ſeem larger, and the ſkin which covers them riſes up when the tumour of the back is compreſſed. If this tumour be opened, it almoſt always proves fatal.

On opening the body, the ſerous matter is found accumulated in the coverings of the vertebral prolongation of the brain; and it is obſerved that the poſterior part of the vertebræ is entirely wanting. In certain caſes the matter occupies only the ſpace indicated by the tumour; ſometimes it occupies that comprehended between ſeveral tumours; and it often happens that it extends the whole

whole length of the vertebral canal, and communicates with a ſimilar collection in the ventricles of the brain.

This diſeaſe is always fatal. It rarely ſuffers the individual to attain to the adult age; and no means can be employed but ſuch as are calculated to prevent any compreſſion hurtful to the tumour, and to retard its rupture. *Hydrorachitis. (Spina biſida.)*

148. The pleura, which lines the breaſt and covers the ſurface of the lungs, forms on each ſide of the thorax a bag with contiguous ſides, in which the ſerous liquid continually ſecreted may accumulate. This liquid accumulates ſometimes on one ſide only, and ſometimes in both at the ſame time.

This diſeaſe, in general, is difficult to be diſtinguiſhed. The phænomena by which it is moſt commonly accompanied are the following: Paleneſs of the face, with a puffed-up appearance, and eſpecially in the lower eye-lid; confined reſpiration, which increaſes by motion and walking, particularly in aſcending a ſteep place; dry cough; impoſſibility of remaining in a horizontal direction; neceſſity of lying on the diſeaſed ſide, or of ſitting, when the two cavities are equally filled; ſenſation of heavineſs towards the lower part of the breaſt; coldneſs, exudation in the limbs.

The partial abſence of air from the lungs, the

preſence of an accumulated liquid, and the ſide where it exiſts, may be diſcovered by repeated percuſſion with the hand in a horizontal and vertical direction. Sometimes the lower part of the thorax, eſpecially on one ſide, acquires a very remarkable development. At other times the hypochondria become ſwelled by the falling down of the diaphragm. A ſoft flabby ſwelling is often remarked on the ſides of the thorax; ſwelling of the feet, hands, &c. It may happen that the pulſations of the heart correſpond to ſome other place than that to which they correſpond in the natural ſtate, eſpecially when the collection exiſts only on the left ſide: the latter phænomena, however, do not excluſively belong to this malady. Some perſons alſo ſtart up in their ſleep, and experience a ſort of ſuffocation: but profeſſor Corviſart is of opinion that theſe ſymptoms are not ſo much owing to dropſy of the breaſt, as to organic læſions of the heart, with which it is often accompanied.

Sometimes the collection is ſpeedily formed in the courſe and towards the end of an acute phlegmaſia of the breaſt. In that caſe, its exiſtence can be diſcovered only on opening the body. At other times it is produced, or at leaſt ſhows itſelf, a long time after the acute phlegmaſia has ceaſed.

In ſome caſes the collection ſeems to be the reſult of a chronic phlegmaſia of the lungs, the traces of which are diſcovered after death. In this caſe,

if

if the collection has been ſlowly formed, the fluid appears to be limpid. In the caſe of acute phlegmaſia, it is almoſt always thick, white or puriform, and interſperſed with clots or albuminous flakes; or, if it be ſomewhat clear, albumen concreted into falſe membranes is found floating in the ſeroſity, or lining the coſtal and pulmonary part of the pleura.

In the laſt place, this ſerous collection often accompanies aneuriſms of the heart, dilatations, oſſifications, and other alterations of that organ or of ſome large veſſels: the collection, in this caſe, is often very opake, and is not confined to the cavities of the thorax.

This affection appears to be ſometimes produced by drinking too large a quantity of cold water when the body is heated. It often ſucceeds the abrupt ſuppreſſion of ſome old or habitual evacuation; an interverſion of the gout, ſome affections of the ſkin, or eruptive fevers. But it has been already ſeen how theſe circumſtances may concur towards the production of phlegmaſiæ, eſpecially chronic ones, of different organs, and particularly of the pleura or lungs; ſo that, in almoſt all caſes, the collection ought to be conſidered as the reſult of a diſeaſe of one of the thoracic organs; on which account, medicine furniſhes very few means to prevent it from terminating in a fatal manner. *Hydrothorax.*

149. A collection of ſerous matter may be formed alſo in the pericardium; but this kind of dropſy rarely exiſts alone, being for the moſt part accompanied with hydrothorax, or even general dropſy. In other reſpects, every thing ſaid in regard to the preceding kind of dropſy may be applied to the preſent one. Its diagnoſtic is ſtill more difficult. There are however obſerved, in common, a very evident ſtate of weakneſs, with a difficulty of reſpiration greater than in hydrothorax, and which oppoſes almoſt every kind of motion; anxiety which proceeds nearly to fainting; with frequent palpitation. The pulſe, for the moſt part, is weak and concentrated, ſometimes imperceptible, and often irregular and intermittent.

The greater part of theſe phænomena, which are thoſe moſt frequently obſerved in dropſy of the pericardium, belong to other diſeaſes, by which indeed it is generally accompanied, but which may exiſt ſeparately; ſo that they only furniſh probabilities more or leſs ſtrong, according as they are more ſtriking and more numerous.

The pericardium may be affected by an acute or chronic phlegmaſia. The characteriſtic ſymptoms of this affection are, for the moſt part, confounded with thoſe which accompany phlegmaſia of the pleura. On opening the bodies, indeed, the percardium is often found to be filled with a fluid of a whitiſh colour or mixed with albuminous flakes, and ſometimes with

with a falſe membrane of greater or leſs conſiſtence. In this caſe, the pericardium is often thick, and in ſeveral parts exhibits rugoſities or ulcerations.

Very often the collection in the pericardium is accompanied with an organic alteration of the heart: in this caſe ſerous collections are found in the other cavities; and the pericardium, only diſtended, exhibits nearly its uſual texture. This collection is very common among individuals who fall a ſacrifice to general dropſy. *Hydrocardia.*

150. The abdominal cavity is that in which the ſerous matter is moſt commonly accumulated. The belly ſwells progreſſively; its tumefaction generally begins in the hypogaſtric region, and increaſes in an uniform manner. The projection of the abdomen increaſes towards its lower part, when the patient is ſtanding or ſitting; and it throws itſelf towards the ſide on which he lies. The fluctuation is ſometimes ſenſible to the touch, and even to the ear, when the body is moved; but it may always be diſtinguiſhed by applying the hand to the ſide of the abdomen, if the fluid be made to undulate by giving a few light blows to the oppoſite ſide. The abdomen ſometimes, in lengthening, aſſumes an ovoid form. The navel often projects, and becomes diſtended in ſuch a manner as to form a ſort of tranſparent bladder.

This diſeaſe, in general, is preceded or accompanied

panied by an exudation from the legs or the genitals. Reſpiration is confined, eſpecially when the patient is in a horizontal poſition; and this ſymptom is often accompanied with a dry cough. The laſt phænomena, as well as the volume of the abdomen, are increaſed by an accumulation of gas in the inteſtines: this may be eaſily known by the reſonance of the epigaſtrium when ſtruck with the hand. This accumulation of gas, which ariſes from a debility of the vital action of the inteſtines, produces in a great meaſure the tumefaction of the abdomen. *Tympanites.*

The patient frequently experiences a febrile ſtate, more or leſs ſtriking, with great thirſt; the ſkin is dry, and the urine in ſmall quantity and coloured.

Dropſy of the abdomen may take place at every period of life; but it is confined chiefly to mature and to old age. It is of great importance to diſtinguiſh thoſe dropſies which take place primitively, without any organic alteration of the viſcera; ſuch as thoſe formed in individuals naturally relaxed and weak, debilitated by long or ſevere diſeaſes, abundant or long continued evacuations. In all theſe caſes the diſeaſe for the moſt part is general, and affords great hope of a cure.

But the ſerous matter accumulated in the peritonæal cavity is in general the reſult of an organic diſeaſe, which may often be diſtinguiſhed, and the traces

traces of which are always obſerved after death. It is, therefore, a chronic phlegmaſia of the inteſtines, meſentery and peritonæum, &c. The peritonæal membrane is thick, covered with an albuminous ſtratum, interſperſed ſometimes with whitiſh granulations or tubercles. A ſwelling is then found in moſt of the meſenteric glands, and in ſeveral other parts of the abdomen. Sometimes there is one point of great ſenſibility, with a dull pain, and even tranſient ſhootings, in the diſeaſed viſcus.

This dropſy often accompanies alſo chronic or acute phlegmaſiæ of the liver, the ſpleen and the lungs, and even organic affections of the heart and large veſſels. In all theſe caſes, it is not ſo much the dropſy that ought to be conſidered as the organic diſeaſe, the uſual progreſs of which almoſt always conducts ſlowly to death. *Aſcites.*

151. There is another ſort of dropſy which generally takes place in the abdomen, and which, in this caſe, may be confounded with aſcites. In this dropſy, the ſerous matter is not diffuſed throughout the whole peritonæal cavity, but is contained in a particular bag (*cyſtis*) produced by a phlegmaſic action of the ſurrounding cellular tiſſue, or formed by the diſtenſion of ſome part or other.

Dropſies of this kind are found in the uterine tubes, in the uterus, the cavity of the epiploon, and

and ſometimes even between the peritonæum and the ſides of the abdomen. In this caſe, the collection is the reſult of an organic alteration by which it is always accompanied.

In general, it is poſſible to diſtinguiſh an encyſted dropſy at its commencement. The tumour begins to make itſelf felt in a part of the abdomen, and the ſides of that cavity offer more reſiſtance there than in the other parts of its extent. The fluctuation is much leſs manifeſt, and in the different movements of the patient the aqueous collection is not diſplaced ſo eaſily as in aſcites. The progreſs of the collection is not in general rapid. The tumour, however, may at length increaſe ſo much as to occupy the whole abdominal cavity. It often happens alſo that none of thoſe circumſtances which frequently occur in aſcites are obſerved. The exudation which takes place ſometimes in the lower extremities, ſeems much rather to be the reſult of a compreſſion exerciſed mechanically, than of a general diſpoſition to dropſy.

This diſeaſe affords very little hope of cure. The evacuation of the ſerous matter produces a momentary relief; but does not prevent the formation of a new collection. When the ſerous matter is accumulated in a membranous bag, it is poſſible that ſome ſucceſs may be obtained by thoſe means employed to prevent a return of the hydrocele.

In

In ſome caſes, this kind of encyſted dropſies are merely an aſſemblage of ſmall tranſparent veſicles, called *hydatides*, the nature of which was long unknown; but it is now aſcertained that theſe globulous veſicles are ſo many worms of a particular *kind (Hydatides)*.

152. The peritonæal tunic which envelops the teſticle by its duplicature, ſuffers itſelf ſometimes to be ſeparated by an accumulation of a ſerous fluid. This kind of dropſy produces, at firſt, a remarkable ſwelling in the lower part of the ſcrotum, which riſes as the accumulation increaſes. This tumour is indolent, exceedingly elaſtic, and has a kind of tranſparency. A fluctuation, more or leſs manifeſt, is felt in it. The raphe is always warped on the ſide oppoſite to the tumour. In this dropſy, the penis appears, in a great meaſure, to have entered the ſcrotum; but when the ſerous matter is accumulated only in the cellular tiſſue of the ſcrotum, it acquires a larger volume.

The teſticle is generally placed in the middle, poſterior, and interior part of the tumour, which exhibits the appearance of a ſuſpended pear. This organ itſelf is, in general, more voluminous and hard, but without having more ſenſibility than in its natural ſtate.

This dropſy is not ſo much a diſeaſe as a ſlight inconvenience, which induces the neceſſity of evacuating the ſeroſity when the ſkin is ſufficiently

ciently diſtended. It rarely diſappears ſpontaneouſly, or by the application of ſimple topics. But it is almoſt always poſſible to cure it by all thoſe means capable of exciting, in the peritonæal tunic, a degree of phlegmaſia calculated to produce an adheſion of the ſides of that membrane. In the caſe of the teſticle being diſeaſed, this practice ſhould not be rejected, as is too often done. A moderate irritation, by ſuppreſſing the dropſy, might preſerve the teſticle, which on many occaſions practitioners are too ready to extirpate.

During the firſt years of life, the peritonæal tunic of the ſcrotum has a communication with that of the abdomen, and may become filled with ſerum. In this caſe, there is produced a tumour, which diſappears by compreſſion, like a genital hernia; but which differs from it by its tranſparency and its elaſticity. This tumour, however, muſt be maintained and reduced in the ſame manner as a hernia.

It is poſſible that a hernia, reduced at an early age and afterwards continuing to re-appear, may leave outwardly its bag, which becomes filled with ſerous matter. This tumour is then of an oblong form, and deſcends immediately along the inguinal ring. The teſticle which is diſtinctly ſeparated from it, is at its lower part. *Hydrocele.*

153. The interior ſurfaces of the articular capſules continually ſecrete a mucoſo-albuminous fluid,

fluid, which in ſome exceedingly rare caſes accumulates and produces a ſort of dropſy. It takes place only at the articulation of the knee; and attacks only weak individuals diſpoſed to exudations, eſpecially after long repoſe. It is ſometimes the conſequence of an acute or chronic phlegmaſia of that articulation, a blow received on that part, &c.

The tumour, in this caſe, is ſoft and fluctuating, projects chiefly on the ſides, riſes a little towards the thigh, and is circumſcribed by the ligaments which fix the capſule to the bones. It produces no pain, and exhibits no alteration in the colour of the ſkin. It is often obſerved that the articular ſurfaces do not touch each other, or at leaſt ſuffer themſelves to be eaſily ſeparated. The fluid contained in theſe tumours is not, in general, ſo aqueous as that of other dropſies; it is for the moſt part thick and ropey like the white of an egg. Sometimes the articular ſurfaces, when examined anatomically, are found altered, or even carious.

In this diſeaſe, to the general treatment of dropſies ſome local applications may be added: ſuch as friction and topical ſtimulants. A ſmall inciſion made on the exterior ſide of the articulation may be attended with ſome ſucceſs, when the oſſeous parts are ſound; in the contrary caſe, the diſeaſe is incurable. *Dropſy of the articulations.*

154. In the laſt place, a ſerous collection may be

formed in the areolæ of the cellular tiſſue, either of one or more parts, or of the whole ſyſtem.

This diſeaſe is eaſily diſtinguiſhed by an uniform ſwelling, without elaſticity, which receives and retains for ſome minutes the impreſſion of the finger. A mere ſcratch of the ſkin gives vent to the ſerous matter, which proceeds gradually from cell to cell, and flows off ſlowly, but without interruption.

It is obſerved, in particular, among individuals of a delicate, effeminate and relaxed conſtitution, who live in a damp, gloomy atmoſphere, and take little exerciſe; among thoſe who have experienced violent evacuations, or long ſickneſs; in a word, it may be produced by all thoſe circumſtances which tend to debilitate the organization. In theſe caſes, it generally begins in the lower part of the legs; ſometimes by an intumeſcence of the face, and ſoon ſpreads over the reſt of the body. The ſkin becomes of a milky white colour, and colder than when in its natural ſtate. The ſwelling is exceedingly ſoft, and, when preſſed, the traces ſometimes remain for ſeveral minutes. The pulſe is ſlow, ſmall, and faint; the patient has never great thirſt, and the urine is not much coloured.

At other times, this cellular effuſion takes place in individuals who are apparently in good health, and without being preceded by debilitating cauſes. In this caſe, it is often the conſequence of ſome organic

organic affections, and particularly of the heart, ſymptoms of which may have before been obſerved. It always begins in the inferior limbs, and its progreſs is commonly much leſs rapid; the ſwelling is leſs flabby, and the impreſſion of the fingers ſooner diſappears. The face and ſkin are not of a pale and milky hue; on the contrary, the cheeks are ſtriped with red, and the reſt of the ſkin is more or leſs coloured: in certain places it ſometimes appears eryſipelatous. The pulſe is often frequent, ſtrong, and hard. The patient has a conſiderable degree of thirſt; the urine is ſcarcer and of a darker colour.

There is ſtill another caſe of cellular, or rather general dropſy, which takes place in the ſpring, among robuſt individuals, in the bloom of life, accuſtomed to ſucculent food, or who have been ſuddenly deprived of an habitual evacuation. In this diſeaſe, the ſkin retains its natural colour; it is firm, receives with difficulty, and retains very little the impreſſion of the finger, and the pulſe is full and hard. The exudation, for the moſt part, occupies the whole of the cellular tiſſue, and ſometimes that of the inferior limbs alone. A collection is often formed in the large cavities.

This peculiar affection ſeems to ariſe from a general plethora, an overcharge of the ſyſtem of circulation; for it readily yields to bleeding and to debilitating regimen.

Cellular dropſy is one of the moſt common. When it develops itſelf as a primitive affection, it is often accompanied by that of ſome of the cavities, eſpecially of the abdomen and of the thorax; but very often it is ſecondary, and comes on after dropſies of theſe cavities.

In the firſt form, it is called by ſome phyſicians *leucophlegmaſia*, and affords great hope of a cure. In the ſecond caſe, this diſeaſe, much more dangerous, is diſtinguiſhed, by many authors, under the name of *anaſarca*. Plethoric dropſy may be eaſily cured.

155. All the areolæ of the cellular tiſſue, the membranes by which the three great ſplanchnic cavities are lined, that which covers the ventricles of the brain, that which envelops the cerebral prolongation along the rachis, the peritonæal tunic of the teſticle, the articular capſules, and all the cyſti, continually ſecrete an aqueous fluid, more or leſs charged with albumen and different ſaline ſubſtances. This liquor muſt be again taken up and continually carried back into the general circulation by the abſorbing veſſels. It is its accumulation in theſe different parts that gives riſe to the different kinds of dropſy, whether the ſecretion be increaſed, or abſorption leſſened; and whether theſe two functions concur ſimultaneouſly by their derangement towards their formation.

When

When there exiſts a great degree of debility, the fluid ſeems to retain nearly its uſual qualities; but in caſes of phlegmaſiæ, and particularly acute ones, it changes its character and becomes charged with albumen. Almoſt all dropſies take place under the ſame circumſtances: a relaxed debilitated conſtitution; weakneſs produced by tedious diſeaſes and exceſſive evacuations; reſidence in low, damp, and obſcure places; a ſedentary kind of life; the abuſe of tepid aqueous beverages, and the long continued influence of melancholy mental affections, &c. In another ſeries may be claſſed organic alterations of the heart and large veſſels, mechanical compreſſion, external ligatures, a tumour in ſome of the interior viſcera; and in ſome robuſt individuals a ſtate of plethora.

In a third ſeries are arranged acute and chronic phlegmaſiæ, and all circumſtances capable of producing permanent tumefactions, in certain viſcera, in the lymphatic glands, &c.

When all theſe cauſes, capable of producing general or partial dropſies, have exerciſed their action for a long time on the animal economy, the conſtitution ſlowly becomes weakened; the vital properties are gradually extinguiſhed; the blood ſeems to aſſume a ſerous character, much more apparent; and all the ſecretions and excretions decreaſe. The whole body ſeems to diſſolve into water, and the ſerous matter accumulates in

the areolæ of the cellular tiſſue and in the different cavities.

The principles of the treatment are founded, almoſt entirely, on a conſideration of the circumſtances which ſeem to have produced the diſeaſe, and on the particular ſtate of the individual.

Plethoric dropſy yields for the moſt part to bleeding, to aqueous beverages, and to diet. That which exhibits all the characters of general debility, which has begun by occupying almoſt the whole cellular tiſſue, and during which no ſign of organic alteration is obſerved, may often diſappear by the continued uſe of tonics under every poſſible form: friction, exerciſe proportioned to the ſtrength, internal medicinal and alimentary tonics, ſpecific ſtimulants, &c. But great caution is required in that which is accompanied by an organic læſion or chronic phlegmaſia of ſome viſcus, and which may be aggravated by any ſtimulant. In a word, the moſt troubleſome dropſy is that which reſults from an incurable organic affection.

To give vent artificially to the collection produces no effect towards the cure of the dropſy. It may even be ſaid that this practice, for the moſt part, is ſoon followed by a more rapid accumulation; and that if the vital action of all the parts, and particularly of the abſorbing ſurfaces, is not ſpeedily reſtored, it then becomes neceſſary to recur to it at intervals progreſſively ſhorter.

There

There are, however, ſome caſes in which the evacuation of the ſerous matter becomes beneficial, and contributes towards the cure; and even when the cure is deemed impoſſible, it often becomes indiſpenſably neceſſary to evacuate the fluid, in order to prevent ſuffocation and to prolong life.

156. In countries habitually damp, but particularly in thoſe which are damp and cold, thoſe who have not an opportunity of ſheltering themſelves from that temperature, and who are beſides weakened by bad nouriſhment, exceſſive fatigue, want, grief, and continual fear; ſailors, ſoldiers, and other perſons who are oftener or longer expoſed to this concurrence of circumſtances, are ſubject to a diſeaſe which announces itſelf by the following ſymptoms: the face appears pale and puffed up; the patient is ſad and dejected; univerſal laſſitude ſoon takes place, with numbneſs and weakneſs in the knees, after the ſlighteſt exerciſe.

The patient experiences a ſenſation of itching in the gums, which become ſwelled, and which bleed when in the leaſt rubbed; they then grow ſoft, fungous, and of a livid red colour. Children often tear them off in fragments with their fingers.

The ſkin is often ſoft and ſhining, ſometimes dry and rough; it becomes covered with red and blueiſh or black livid ſpots, of different ſizes.

During the courſe of the diſeaſe the patient ex-

periences conſtant pains in the limbs, in the loins, and frequently in the breaſt. Theſe pains, which are liable to ſhift, increaſe by every kind of motion.

In ſome individuals, a ſwelling takes place around the malleoli, eſpecially in the evening, followed by an œdematous ſwelling of the whole leg, which yields very little to the preſſure of the finger, and retains the impreſſion of it. Sometimes tumours and nodes appear in different parts. In the courſe of the diſeaſe the legs bend, and remain in that ſtate; pain and ſwelling take place in the knees, which ſometimes acquire a monſtrous ſize, and become covered with livid ſpots and hard tumours: at other times they are exceedingly waſted and dry.

When the affection has made conſiderable progreſs, frequent and copious hæmorrhagies take place from the noſe, gums, lungs, &c. In ſome individuals, violent dyſenteries come on, with acute pain; in others, pure blood is voided in large quantities by ſtool, without diarrhœa or griping pains.

The gums, exceedingly fungous, painful, and fetid, are ſometimes profoundly ulcerated, and as it were gangrenous. The teeth become looſe, and often drop out. Little fever, however, is obſerved; the appetite continues, and the patients retain the full uſe of their ſenſes. While in a ſtate of reſt and

and in bed, they experience no uneaſineſs; but have a great tendency to fall down on the leaſt motion, eſpecially when they have remained a long time without taking exerciſe; and they often die ſuddenly, when violently ſhaken or when removed into the open air.

Some have a dyſentery or troubleſome ſalivation, and there is then frequently obſerved an alternate ſucceſſion of theſe two ſymptoms during every two or three days.

When it is poſſible to remove the individuals from the cauſes which produce and maintain this affection, it may be eaſily cured. Thus, when ſailors, who have contracted this diſeaſe in the courſe of a long voyage, are carried on ſhore in a country the ſoil and temperature of which is dry and warm; if they find in it vegetables, freſh meat, and good wine; and if their ſituation admits of their taking a little exerciſe, their health is ſpeedily reſtored. They are generally ſeized with a ſlight looſeneſs; their gums become firm; their ſkin grows moiſt; the livid ſpots by which it is covered turn yellow and diſappear; and all the other ſymptoms vaniſh in ſucceſſion. But it ſometimes happens that the diſeaſe terminates by a permanent diſpoſition to chronic rheumatiſm, rigidity of the limbs, miliary eruptions; and there often remains a ſwelling of the limbs, with ulcers: ſometimes there come on obſtruction of the viſ-

cera of the abdomen, dropſy, phthiſis, hypochondriaſis, &c.

In the laſt place, when the diſeaſe has acquired a greater degree of exacerbation, it exhibits the moſt irregular and moſt extraordinary ſymptoms; the ſcars of the old ulcers burſt; the callus of conſolidated fractures becomes ſoft, eſpecially in places where there appeared ſoft tumours, painful and livid, and theſe crevices degenerate into ulcers.

The ulcers, on removing the dreſſing, often exhibit a large clot of blood; they diſcharge only a fetid bloody matter, which adheres like glue around their ſurface; the fleſh below is ſoft and fungous; the edges are ſwelled and livid, or often hard and callous. In the further courſe of the diſeaſe there ariſes from the bottom of theſe ulcers a ſoft bloody fungus, which often aſſumes in one night a conſiderable volume, and, if not deſtroyed by cauſtic or the biſtory, reappears at the next time of dreſſing: when the biſtory is employed, abundant hæmorrhagies often take place. Theſe ulcers, which are exceedingly fetid, have a ſtrong diſpoſition to gangrene. A creaking noiſe of the articulations, eſpecially in young perſons, is often obſerved on the leaſt motion; in others a duller noiſe is heard in the breaſt, during reſpiration *.

Sometimes

* On opening the bodies, there is obſerved in the firſt caſe, a looſening

Sometimes there come on violent colics, obſtinate conſtipation; or the patients ſink under copious evacuations of blackiſh blood from the urinary paſſage, from the rectum, the lungs, or the noſe. The urine in general is reddiſh, turbid, thick, and fetid.

In ſome caſes the face has been obſerved to ſwell, in the courſe of half an hour, in ſuch a manner as to cloſe up the eyes; and this ſwelling, which is directed towards the moſt declining part, alternately diſappears and returns. At other times there comes on a prodigious ſwelling of the gums and cheeks; then gangrene in the lips, and caries in the jaw.

The pulſe becomes ſmall and frequent. The appetite, which in general continues unimpaired, at length diſappears; and the thirſt is increaſed: ſometimes the patients, till the period of death, are tormented with a *fames canina*.

This affection continues ſeveral months, during which the individuals affected with it retain a ſtrong diſpoſition for contracting all the prevailing maladies of the time. In general, the moſt fatal complication is pernicious fever.

Towards the end of the diſeaſe, the patients

looſening of the apophyſes with a ſwelling of the bones; in the ſecond, a looſening of the ſterno-coſtal cartilages and a ſolution of the ſpongy ſubſtance of the ribs. *Poupart Mém. de l'Acad. des Sciences.*

frequently

frequently experience a conſtriction and ſort of oppreſſion of the breaſt, with a difficulty of breathing and a pain under the ſternum, and very often in one of the ſides. Sometimes, without any pain, the reſpiration ſuddenly becomes ſhort and accelerated; and, in this caſe, the patient drops down dead, even while walking.

On opening the bodies, a flaccidity and want of tenacity is obſerved in the parts; an extravaſation of blood throughout the whole cellular tiſſue; a laxity in the articular ligaments, with an alteration of the ſynovia, which has become greeniſh and cauſtic; and, in the laſt place, caries or a ſoftening of the bones. In thoſe who die ſuddenly, phlegmaſic affections are found in the thoracic or abdominal viſcera. *Scurvy.*

The ſcurvy has been aſcribed to the great quantity of ſalt proviſions employed by ſailors; to the want of freſh vegetables, to corruption of the air, ſhut up above the ſtagnant water in the bottom of the veſſel, and to the vapours which ariſe from the ſea. It is not probable that theſe circumſtances are the eſſential and neceſſary cauſes of ſcurvy; but they muſt no doubt contribute to favour its progreſs.

This malady ſeems much rather to be produced by moiſture.

The atmoſphere of the ſea, cæteris paribus, is conſtantly damper than that of the land; and ſail-

ors

ors are expoſed to its action in the night as well as in the day time. If there be a long continuance of rainy and ſtormy weather, the ſailors become wet by the fog, which inceſſantly riſes from the ſea; the men on duty on the deck are drenched by the rain; the water penetrates into the veſſel; and as there is neither fire nor ſun, nothing dries, and the moiſture corrupts, in conſequence of the neceſſity of keeping every part of the veſſel cloſe. The ſailors, who ſleep four hours in damp hammocks, and who then labour four hours amidſt the rain and cold, while their clothes dry on their backs, ſeldom fail to become ſcorbutic, if they remain long in ſuch a ſituation.

Moiſture, though the eſſential and conſtant cauſe of ſcurvy, exerciſes a very feeble action on men who enjoy perfect health; who poſſeſs a great deal of courage; who are laborious, and do not ſuffer themſelves to be diſheartened by fear. It ſeldom attacks thoſe who are ſheltered from its influence by enjoying the conveniences of life; and hence we rarely find that naval officers are expoſed to its attacks. On the other hand, it has a very powerful action on thoſe who are weakened by anterior diſeaſes; on thoſe who are debilitated, indolent, lazy, timid, or peeviſh; and on thoſe who uſe bad food, or who experience a want of proviſions and of water.

The

The cauſes which produce ſcurvy, and thoſe which favour its development, occur more frequently and continue longer at ſea than at land; it is there more difficult to be ſheltered from their action, and the diſeaſe of courſe acquires a greater degree of intenſity, which makes it be conſidered as more dangerous. But the ſame cauſes are met with at land, and produce a ſimilar affection; ſo that there is no eſſential difference between the ſea ſcurvy and that which prevails at land.

Though it appears difficult to guard againſt the ſea ſcurvy, it is poſſible to avoid it by proper precautions; the principal of which is to avoid dampneſs, cold, and exceſſive heat; to provide ſound, wholeſome, and varied nouriſhment; and to baniſh all melancholy moral affections. The celebrated Cook, during a voyage of more than three years, made ſuch prudent regulations on board his ſhip, that of 112 men, of which the crew conſiſted, he loſt only one, who had been in a bad ſtate of health before he embarked; and yet the cauſes of ſcurvy were ſo ſtrong that even the ſheep ſeemed to be affected by it, as was diſcovered by the ſwelling in their gums, languor, loſs of appetite, &c.

In places where rains are frequent and dampneſs continual, as at Fort William in Scotland, in marſhy countries ſurrounded by thick foreſts, often inundated and covered by ſtagnant and corrupted

rupted water, ſcurvy is endemial. It is moſt common among poor people, who lead a lazy indolent life; and among ſhoe-makers, taylors, weavers, fiſhermen, &c.

Scurvy has been epidemic in Iceland, Greenland, and in the northern parts of Ruſſia: it is infallibly produced by the thick fogs and bad nouriſhment of the inhabitants. Formerly the ſcurvy was endemial in Holland *; but at that time this country, expoſed to frequent inundations, was almoſt one immenſe marſh. At preſent, the land being drained, the houſes healthier and cleaner, and the people better fed, this diſeaſe has diſappeared. It is now obſerved very rarely, and only in the loweſt and dampeſt places, and in individuals among whom ſcarcely any change in their mode of living has been introduced: that is, where the houſes are low, dirty, and badly lighted; where the food of the people is ſalt pork or bacon often rancid, with coarſe bread; where the waters are in a ſtate of ſtagnation, &c. This affection has alſo reappeared, under an epidemic form, during ſeveral wars, but always after inundations, in conſequence of the ſluices being opened.

The ſcurvy, which was frequently epidemic alſo in Lower Saxony, in Denmark, Sweden, and Nor-

* It was from this country that the firſt and moſt correct deſcriptions of this diſeaſe were obtained.

way,

way, has now ceaſed in conſequence of the ſame general cauſes of ſalubrity. The houſes, in theſe countries, are more elevated and more commodious; the waters can more eaſily be drained; the uſe of wine and beer is more general, &c.

Several authors have been of opinion that ſcurvy is contagious. Its epidemic character alone muſt have given riſe to this idea, which is not confirmed by experience: beſides, the well known nature of this malady, and various facts, will not admit of our believing that it can be communicated by contact.

In the ſcurvy, the long continued action of dampneſs, favoured by many other acceſſory debilitating circumſtances, ſeems to have a tendency to weaken the action of the muſcular organs, and that of the capillary veſſels. A want of mobility in the articulations, indeed, takes place; the motions of the limbs are performed only with pain and difficulty; the fluids do not circulate freely to the extremity of the veſſels; they ſeem to exude, as in dead bodies, through their weakened ſides, and to diſcharge themſelves into the cellular tiſſue, or to produce hæmorrhagies. A kind of death, therefore, takes place at the ſurfaces, which ſeems to ariſe from a commencement of decompoſition, modified by a remnant of life: theſe accidents produce others more dangerous and

further

further extended, which at length extinguish life completely.

A great many peculiar circumstances, besides dampness, may slowly conduct to a state similar to that of scurvy; and many chronic diseases, such as phthisis, cancer, dropsy, &c. seem all to terminate by a sort of scorbutic affection.

END OF THE SECOND VOLUME.

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